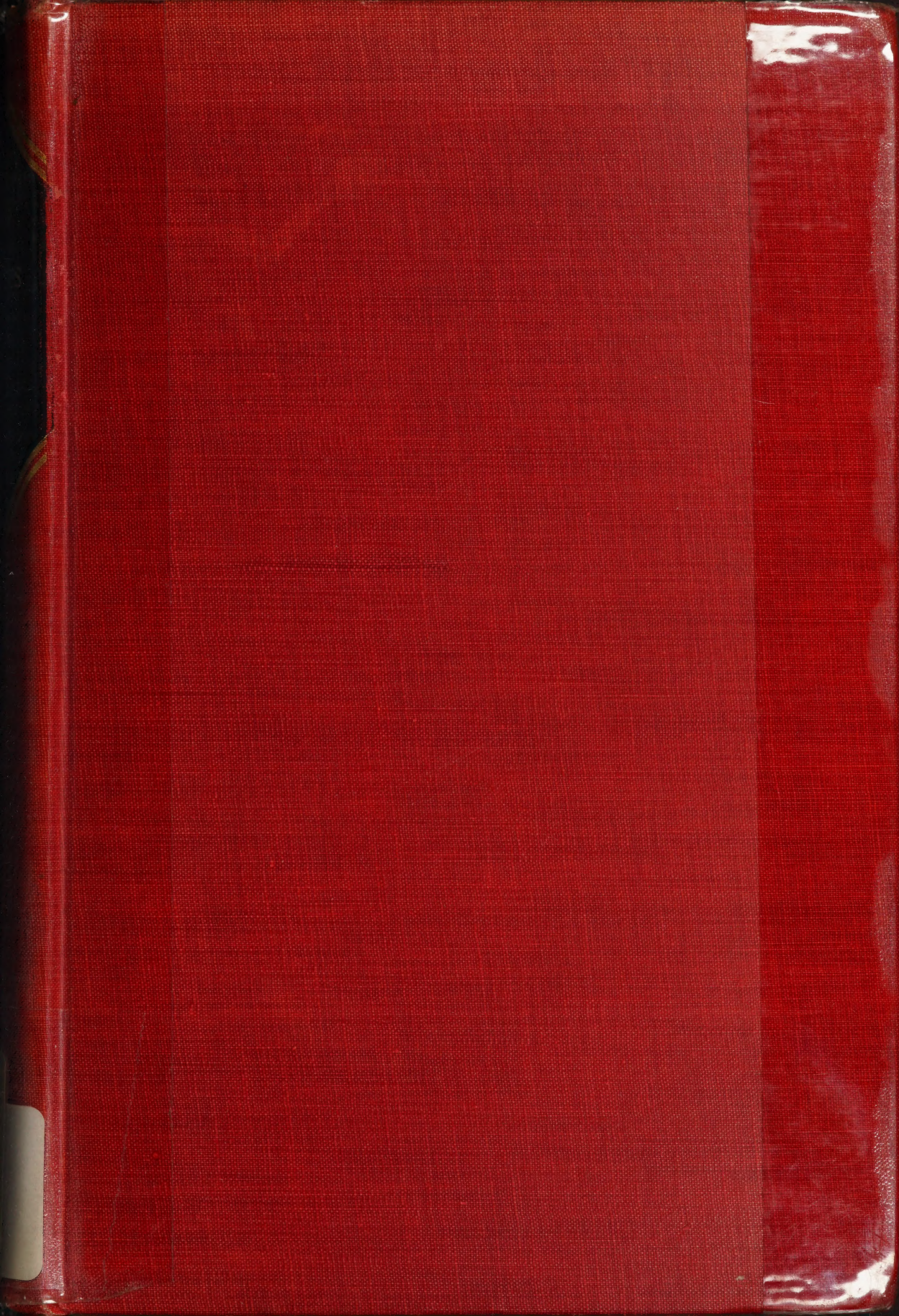






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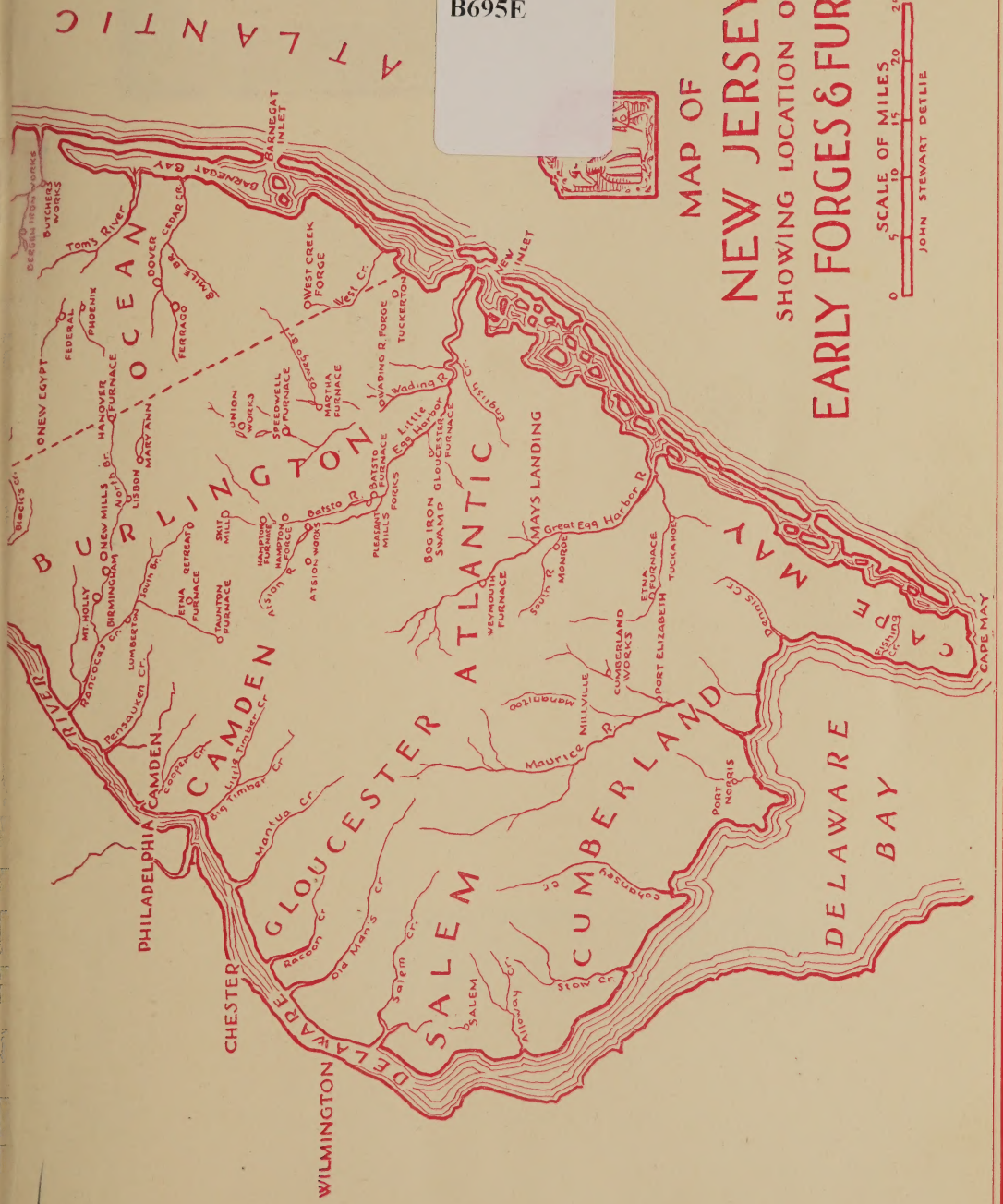
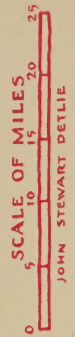


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MAP OF
NEW JERSEY
SHOWING LOCATION OF
EARLY FORGES & FURNACES



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WOODEN BELLOWS USED AT DOVER FORGE

EARLY
FORGES & FURNACES
IN NEW JERSEY

By
CHARLES S. BOYER

President
Camden County Historical Society

PHILADELPHIA
UNIVERSITY OF PENNSYLVANIA PRESS

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DEDICATED
TO
MY WIFE

Whose enthusiastic interest and
constant inspiration made this
record possible

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PREFACE

STUDENTS of the industrial development of New Jersey have long been aware of the fact that its printed annals contain no adequate account of the early forges and furnaces whose output once played an important part in its economic life and in that of neighboring regions. With the exception of the chapters on the iron industry in the *History of Morris County*, published in 1882, only meager accounts of individual enterprises are found in the county histories and in a few brochures dealing with particular phases of the trade.

In an attempt to supply this void, the author began, about twenty years ago, to gather notes and facts relating to the once numerous and widely scattered plants. The difficulties of the quest immediately became apparent. Few of the old forge and furnace books could be located, thus compelling a laborious search through the files of contemporary newspapers, early deeds, wills, and private papers as the primary sources of information on the various ironworks. Much material was also gleaned piecemeal from the colonial laws, legislative minutes, court records and the New Jersey Archives. Recently a veritable mine of historical information was made available through the discovery by Dr. Carlos E. Godfrey, among a mass of dust-laden papers at the State Capitol, of the tax duplicates of a number of the counties, furnishing authoritative proof as to the ownership of early ironworks, together with the number of forge fires, and also giving the number of acres of improved and unimproved land attached to these early enterprises.

Bit by bit the story was pieced together, undergoing constant revision as new "finds" developed fresh angles, often completely upsetting that which had hitherto been accepted as creditable fact. In this connection it may be said that local traditions as to the origin and subsequent history of many of the ironworks of New Jersey were frequently found to be unreliable and have not been given credence here, unless verified by some authoritative contemporary record.

In scanning so large a mass of material and in collating the grist of disjointed notes collected over a period of years, it is in-

Preface

evitable that some items have escaped attention. Possibly, too, errors have crept in undetected, to mar the author's aim of accuracy. For gaps in a few of the accounts of the individual works, he pleads the reader's indulgence, intensive research having failed to supply the necessary data. It is hoped that local historians having access to family papers and records still preserved but yet undisclosed, will be able to fill in such deficiencies.

Primarily this study of iron-making in New Jersey has been confined to the forges and furnaces which were established before the close of the eighteenth century. An exception, however, has been made in the case of the bog-ore industry, to which but little attention has been given heretofore, and therefore many iron-works built after 1800 have been considered. Fortunately, when this study was first begun there were several persons still living who had had personal contact with this interesting branch of iron manufacture. From them valuable facts were learned about the locations and ownership of many of these now forgotten works.

Some attention has been given to outstanding historical events associated with the localities in which the early ironworks were situated, and a personal touch has been added to the narrative in including a brief sketch of some of the early ironmasters. The reader is reminded, however, that such sidelights are given only to present a glimpse of the historic importance, local or otherwise, of these places and individuals, and are not intended to be complete histories, extended genealogies, or elaborate biographies.

Footnotes and references have been given wherever a controverted point is involved, or where they confirm an important date or statement. Many references to sources of information are likewise included in the text, to aid readers inclined to do further research.

As to the arrangement, the forges and furnaces are presented in alphabetical order, using the earliest known name in each case. To have attempted to arrange them geographically or chronologically would have been misleading and unsatisfactory.

To the many friends who have furnished information and helpful suggestions the author desires to express his grateful acknowledgment. He is especially indebted to Dr. Carlos E. Godfrey and Mr. Nathaniel R. Ewan, for invaluable aid and assistance in the preparation of this work; to Dr. B. F. Fackenthal, Jr.; Chancellor Edwin R. Walker; and to the late Mr. Charles F. Green. The author is indebted to Mr. Charles H. Schopbach for numerous suggestions and a critical reading of the manuscript. Likewise he

Preface

desires to acknowledge a great obligation to Mr. Arthur C. Bining of the University of Pennsylvania, for reading the text, and for constructive suggestions. For other valuable assistance due acknowledgment has been made in the proper place through the following pages.

CHARLES S. BOYER

Camden, N. J.

June 1, 1931.

ABBREVIATION

The letters *S. S. O.* in the footnotes refer to the records in the Office of the Secretary of State at Trenton, New Jersey.

INTRODUCTION

LOCATION OF EARLY FORGES AND FURNACES

WHILE it is well authenticated that the American Indians used certain powdered iron ores as pigments and war paints, there is no evidence to show that they were familiar with the working of the ores into metallic forms. It was left for the trained metal workers of Europe to develop the processes and to build plants for the manufacture of iron.

The location for the successful operation of the early charcoal furnaces and forges was determined by two very essential elements—streams and forests. The first furnished the power and the other produced the wood from which charcoal, or "coal," as it was called, was made. To provide sufficient water power at all seasons often required an outlay of large sums of money in the building of dams and sluiceways and the installation of water wheels, while the large amount of charcoal needed for even a moderate sized furnace or forge necessitated extensive tracts of land. It is estimated that for a furnace at least four square miles of woodland should be available. Thus all the early ironworks were situated on rivers or creeks and in unsettled and heavily wooded territory.

The writer has often heard the older inhabitants of the Pine Belt say that a successful bog-ore furnace required at least 20,000 acres of timber land for its supply of charcoal, and that such tracts were usually divided into sections of one thousand acres, one of which was cut each year and the timber used in making charcoal for the season's blast. By the time the last section had been cut, the trees on the first one had grown up again and were ready to be converted into charcoal, and so on with the other sections. Mr. C. P. Wilber, State Forester, in a letter to the author says that from his experience and observation it might have been possible to handle South Jersey pine land so that it would be available for cutting a crop of charcoal wood every twenty years. This is assuming that the pine was not expected to grow to a large size but could be used in diameters ranging from seven inches to twelve inches.

New Jersey Forges and Furnaces

The question of nearness to the source of iron ore was not always of primary importance. The Dickerson Mine in Morris County supplied many works with ore, some of which was hauled forty and fifty miles to the ironworks. A number of the New England furnaces obtained their ore from Little Egg Harbor in New Jersey and later several of the West Jersey furnaces secured their iron ore from the Hudson River district.

In New Jersey three classes of ores have been used for making iron. Magnetite and red hematite ores are found only in the northern part of the state, while bog ore (or meadow ore) occurs in almost every section, but has been most extensively worked in the southern parts of New Jersey. The so-called "hard ores"—magnetite and red hematite—are too well known to need any further mention, but bog ore, since it is reproductive, calls for a brief description of its origin. Bog ore is a variety of limonite ore.

In the low lands and meadows in many parts of the state, are found beds of marl and strata of a distinctly ferruginous nature. The waters, highly tinged with vegetable matter, percolating through these deposits take into solution a considerable quantity of iron in the form of oxide. As these waters emerge from the ground and become exposed to the air, the iron solution decomposes and deposits a reddish muddy "sludge" along the banks, in the coves of the water courses, or in the beds of the swamps or wet meadows. This process being a continuous one, the deposit in time soon becomes of sufficient thickness to be classed as a bog-ore bed. Thus the ore is formed by the reducing action of decaying vegetable matter on soluble iron salts.

It is estimated that an exhausted bog-ore bed will renew itself in about twenty years, providing the soil in which it is deposited has not been drained and if there is sufficient vegetation to act on the iron salts. Whether bog ore will prove as useful in the future as it was to the first immigrants depends upon certain conditions. In view of a statement made by D. F. Hewitt of the United States Geological Survey before a recent meeting of the American Institute of Mining and Metallurgical Engineers that "signs of exhaustion appear in the production of minerals all over the world," the renewal of the bog-iron ore beds has a special significance.

The two largest deposits of bog-iron ore which were worked during the early period were those in the southern part of New Jersey. The one was along the banks of Mullica or Little Egg Harbor River and its tributaries, and covered an area of about

Introduction

twenty miles along these streams and approximately three miles in breadth. The other tract within which the bog ore was extensively found extended for about the same distance along Wading River and its branches. The deposits in other localities will be mentioned under the respective furnaces and forges.

No attempt will be made in these pages to go into the technical phases of iron making, but in order that the reader may have a better understanding of the history of these early forges and furnaces, it will be necessary to outline briefly, in a general way, the several processes, and to mention some of the terms used in the early industry.

THE BLOOMERY AND FORGE

The bloomery differed very little from the blacksmith's forge, except that the hearth was larger and the sides deeper. In beginning to work one of these forges, the hearth was first heated by keeping it two-thirds full of ignited charcoal for four or five hours. The fuel was then pushed up against the air-blast inlet (tuyère) and sloped in an incline towards the opposite side, and upon this bed of hot coals was placed the ore, flux, and charcoal. The air blast was then gradually applied. The charge of iron was now slowly worked with a bar so as to allow the air current to come into contact with all parts of the mass. The "loop," as it was called, while largely metallic iron, contained many impurities. This mass was lifted out and subjected to the blows of a heavy hammer by which some of the foreign matter was hammered out and the iron wrought into a more regular shape. The hammer, which consisted of an iron block weighing from 400 to 600 pounds, was fastened to one end of a wooden beam in such a manner as to allow a free up-and-down movement. The tilting motion was given to the hammer as the opposite end of the beam engaged cams placed on the circumference of the water wheel. The hammer was thus raised and allowed to fall by gravity on an anvil placed in a parallel plane with its lower face, the semi-molten iron being put on this anvil and subjected to successive blows until the desired size and shape were obtained. In some of the earlier forges the irregular mass was lifted out while soft and formed into a pillow-shaped piece by means of a heavy wooden maul before it was put under the tilt hammer.

The partially shaped piece was put back into another forge hearth similar to the first and when softened by the heat, but not melted, was again subjected to the successive blows of the tilt

New Jersey Forges and Furnaces

hammer until it had taken the required shape. This forge was called a "chafery." The resultant products of these forges were chiefly long square iron bars. Where smaller bars were made some of the forges had small lift hammers, called "martinets."

Richard Erskine in a letter to the associates of the American Company in London dated at Ringwood, N. J., March 27, 1772, says

In this province there are a great many forges where they make bar iron directly from the ore, which occasions a much greater consumption of coal than by pigs. Where that process is used they go by the name of Bloomeries.

While there were many of these forges for the manufacture of iron directly from the ore in use in New Jersey, a large number of the forges used pig iron as their raw material and converted it into bar iron. These forges were sometimes incorrectly called bloomeries. The terms have been so loosely used in New Jersey that it is impossible to determine positively from the commonly accepted name of the works whether the iron produced therein was made directly from the ore on the forge hearth or from pig iron.

A "stamping mill" often accompanied the bloomery or forge. It was used to crush the hardened ore mass and "furnace cinders"¹ so that the metallic iron could be more easily freed from the dross and foreign matter. These mills were very crude consisting of one or more heavy iron drop-hammers operated by a water wheel. They were very noisy, and forges which otherwise were well concealed in the woods could be located by the constant pounding when the stamping mills were in operation.

THE FURNACE

Both bog ores and the hard iron ores, were reduced to metallic iron in the blast furnace. The furnace consisted of a four-sided stack of stone or brick, about twenty feet or more in height and twenty to twenty-four feet square at the base, tapering toward the top to about sixteen to twenty feet square. Within this structure and separated by a lining of sand or broken stone was a center core, made of fire bricks or other refractory material and open at both ends. It resembled in shape "a large hen's egg stand-

¹ Due to the fact that, in early iron furnaces, the mass was large and the heat not nearly so intense as in the modern furnace, much metal in little particles, was left in the slag or dross which was drawn off from the top of the molten mass and this, as will be seen later, became quite an article of commerce.

Introduction

ing on its largest end," about ten feet in diameter at the widest part and eight feet at the top, and rested on a square chamber also built of fire bricks, called the hearth.² Three of the sides of the hearth descended to the hearthstone, but on the fourth side was a partial partition of fire brick, called "the tump," which was supported just above the hearthstone and separated the front and back portions of the hearth. On each side of the stack were arches extending into the masonry, through which the air-blast pipe, or "tuyère," extended, while in the front arch were two outlets for drawing off the molten iron and the fused slag, or "cinder."

A fire was now kindled on the hearth and kept going until the furnace stack was thoroughly heated, when a small charge of ore, charcoal, and flux was added in alternate layers, and the air blast turned on. The flux in the northern sections of New Jersey consisted of limestone, and in other places where limestone could not be obtained oyster shells were substituted. The purpose of the air blast was to keep the molten mass in a state of agitation and introduce the necessary amount of oxygen to complete combustion and produce the intense heat required to separate the metal from the accompanying impurities. As the mass was melted the impurities or dross rose to the top and the metallic iron gradually sank to the bottom. The slag or dross was drawn off through the upper outlet from time to time and the iron tapped from the lower opening every nine or ten hours. The latter was run through long gutters in the sand called "sow" moulds and then into crude oblong moulds in the sand called "pig" moulds.

From time to time as the iron was drawn off, new charges were introduced into the top of the furnace, the process being a continuous one during the blast. In the earlier furnaces a "blast" seldom exceeded sixteen to eighteen weeks, which was about the limit that the lining of the furnace would stand under the intense heat. Later, as the ironmasters obtained more experience, and better heat-resisting materials were found, the length of a blast was increased to seven or eight months.

These early furnaces set down in the midst of the primeval forest presented a picturesque scene. In North Jersey they were always built against the side of a hill so as to be more easily replenished with the ore, charcoal, and flux necessary to continue the blast. It was the common practice in colonial times to make up the charges by measuring definite quantities of each of the ingredi-

² In the earliest furnaces the diameter at the bottom was not over three feet.

New Jersey Forges and Furnaces

ents, but in later years the materials were weighed for each charge. At first there was no protection on the hill or the bridge, but when the weighing method was adopted, the "scale house" and the "bridge house" or "top house" came into existence. In West Jersey, owing to the country being flat, it was necessary to build a long inclined ramp or plane to the top of the stack so that the ore, fuel and flux could be taken in wheelbarrows to the filling opening.

At the front of the blast furnace was the casting or moulding house with its high roof, made of log posts covered with boards which were hewn in the vicinity and sawed on the premises. The floor of the casting house, with its rows of crude moulds made in the scorched and blackened sand may be likened to the plan of a city in which many alleys, lanes, and streets branching from a main artery or highway are represented by the forms for the "pigs," "sows," and "runners."

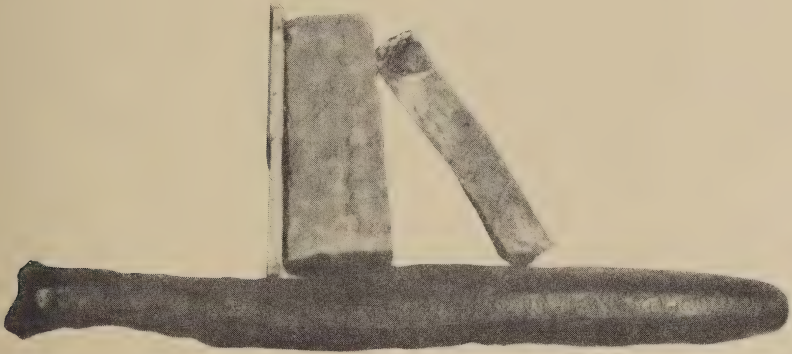
In the furnaces it was necessary to maintain the charge in a molten state; so when the water wheels, which operated the blast, were stopped because of ice the processes of iron making were halted. The furnaces were therefore "blown out" as soon as the heavy ice began to form and were not started up again until it had practically disappeared. On the other hand, the charges in the bloomeries and forges being small and the processes being intermittent they were usually continued in operation summer and winter save during the time when the water wheels were so completely frozen in that they could not be freed of ice. The period of suspension of work varied with the locality. During the time the furnaces were out of blast the work of repairing roads and dams was carried on, the furnaces were relined and new hearths installed.

THE FURNACE COMMUNITY

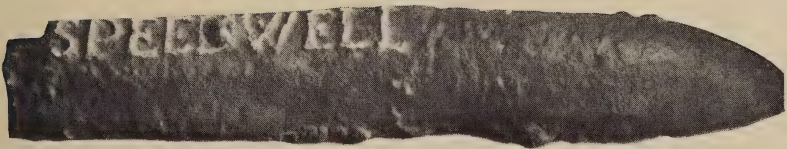
Near the furnace were the charcoal sheds or "coal houses" and other buildings. The workmen's houses were only a short distance from the works and not far away stood the master's mansion house. For the times and surroundings, the "big house," as the latter was called, was an elaborate establishment, with extensive grounds embellished with shrubbery, fine trees, and invariably an old-fashioned flower garden. Hospitality was expressed in everything about the house. The latch string was always out, and the workmen were expected to bring their troubles, cares, and anxieties to the master or manager for a solution. The passing stranger,



PIG OF ANDOVER IRON FOUND AT VALLEY FORGE



BRICKS FROM SPEEDWELL FURNACE AND PIG OF
MARTHA FURNACE IRON



PIG OF SPEEDWELL IRON

Introduction

who ventured into the forest depths, was sure of a hearty meal and often a comfortable bed at night. Inside the house each of its numerous rooms had the welcome fireplace, many of which were ornamented with Dutch tiles and decorative fire backs.

In the carpenter shop were the moulds and patterns for plow-shares, pots, pans, stoves, fire backs, water pipes, and a variety of other articles that were made in the casting houses. Soon after the furnace was established the owner often built a schoolhouse and a church for his workmen, and frequently provided, at his own expenses, the teacher and the minister. Invariably a store was opened under the direct supervision of the master and filled with a wide variety of goods needed by the workers and their families. Seldom did these employees get further away from the works than the neighborhood tavern, which was always to be found within a comparatively few miles of the furnace.

LABOR

In the early days, many of the furnaces and forges were operated largely by negro slave labor, especially in the northern parts of New Jersey, where slavery was more general than in the lower end of the state. Another class of labor used was the indented servant from Germany, England, and Ireland. These servants, called "redemptioners," came to America under a contract whereby the ship's captain might sell their services for a term of years, usually seven, in payment of the passage money. They proved, however, in many instances to be a troublesome class, owing to their inclination for running away from their masters. The losses which the purchasers suffered from this defection amounted to a considerable sum annually.

ATTEMPTS BY GREAT BRITAIN TO REGULATE THE INDUSTRY

The establishment of an infant industry with all its attendant hazards was not the only difficulty that confronted the proprietors. As early as 1719, the proprietors of English ironworks, fearing the competition of American-made iron, succeeded in having a bill passed by the House of Commons prohibiting the "manufacture of iron wares of any kind out of any sows, pigs, or bars whatsoever," and the House of Lords added "that no forge going by water, or other works should be erected in any of the said plantations for the making, working, or converting of any sows, pigs, or cast-iron into bar or rod iron." While the bill was finally de-

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feated, it was a warning note to the colonists of what they might expect later.

From a letter of Richard Partridge, the London agent of the Province of New Jersey, dated 2 Mo., 21, 1729,³ we learn that there was then pending in the House of Commons a bill having for its aim the preservation of His Majesty's woods in America and for encouraging the importation of naval stores from thence, which contained a clause "prohibiting the maintenance or erecting of any Iron Forge for making Bar-Iron or Iron-Rods," and directing the colonial governors to demolish any "forge going by Water." While this clause in the bill was stricken out, the agitation against the American iron industry continued unabated for many years. Finally, in 1750, those who favored the repeal of the duty on American iron secured the passage of an act placing the American product on a more favorable basis. In conformity with instructions from the Lords of Trade, Governor Belcher issued a proclamation in which he called the attention of the colonists to the

Act to encourage the Importation of Pig and Bar Iron from His Majesty's Colonies in America, and to prevent the Erection of any Mill or other Engine for Slitting or Rolling of Iron; or any Plating Forge to work with a Tilt hammer, or Any Furnace for making Steel in Any of the Said Colonies.

The owners of each slitting or rolling mill, plating forge, and steel furnace erected before 1750 were required to submit to the sheriff of the county in which it was located full details of its plant and equipment, and this official was directed to transmit the information to the Secretary's office at Burlington.

Under the date of November 10, 1750, Governor Belcher notified the Board of Trade that there were the following works which came within the Act of 1750:

"One Mill or Engine for Slitting and Rolling of Iron Situate in the Township of Bethlehem in the County of Hunterdon on the south Branch of the River Rariton the property of Messrs William Allen and Joseph Turner of Philadelphia which is not now in use, One plateing Forge which works with a Tilt Hammer Situate on a Small Brook at the West End of Trenton in the County of Hunterdon aforesaid the property of Benjamin Yard of Hunterdon aforesaid which is now used, One Furnace for the making of Steel Situate in Trenton in the County of Hunterdon aforesaid the property of the aforesaid Benjamin

³ *New Jersey Archives*, First Series, XI, 176-179.

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Yard which is not now used, and were all Erected before the twenty-fourth day of June last as appears by the returns hereto annexed."⁴

DEVELOPMENT OF THE INDUSTRY

In 1754 Governor Belcher, in answering a query from the Board of Trade as to conditions in this Province, said:

The County of Morris was lately divided, into two Counties, viz:, Morris & Sussex, are chiefly mountainous, rocky Land, which yields plenty of Iron Ore, & Timber; & there are now three Furnaces within them, which yield, a considerable Quantity, of Pig Iron, & a great Number, of Forges, for melting Bar Iron, of the Pigs, & a considerable Number of Forges, or Bloomeries, which make Bar Iron, out of the Oar; These Counties, are so well timber'd, that they can supply Coal enough, for a long Time, for these, & many other Iron Works.⁵

Governor Franklin, in 1768, reported that there were in the colony eight blast furnaces for making pig iron and forty-two forges "for beating out Bar-Iron." There were also a slitting mill, a steel furnace, and one plating mill. He says "I am told that none of the three latter are carried on with Vigor, and that scarce anything has been done at the Steel-Furnace for several Years past."

Notwithstanding the attempts to suppress and harass American iron manufacture, the industry thrived. J. L. Bishop in his *History of American Manufactures* says:

So numerous were the charcoal furnaces and bloomerics of the State, that a writer, about this date (1784), observed that it was impossible to travel across the Province without meeting with some little Iron-Forge. If a proprietor had a tract of marsh woodland which he wished to clear up, he threw a dam across the upper part where the streams entered, and there fixed the wheels for an Iron-Work.

Most of these early forge builders had very little working capital and were dependent upon quick sales for their finished products. The rivalry for business was very keen and many unethical practices crept into the trade. Besides the cutting of prices, the greatest evil was the enticing of experienced workmen from one plant to another under various pleas. This situation eventually proved very costly for all the operators, many of whom became involved in financial difficulties. As early as 1773, an attempt was

⁴ *New Jersey Archives*, First Series, VII, 558.

⁵ *New Jersey Archives*, First Series, VIII, Part II, 79.

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made to get together, and, to that end according to the *New York Gazette and The Weekly Mercury*, August 23, 1773, a call was issued for a meeting of the masters or owners of the forges and furnaces in New York, New Jersey, and elsewhere, to be held at Morristown, New Jersey, on the third Monday in October, to consider the measures necessary to the better conduct of their business. This was followed by a second notice⁶ calling a meeting of owners, or their proxies, to assist in the "*forming of some Regulations which seem absolutely necessary in carrying on the Iron-Works in this Part of America, and will in the End be conducive to the Advantage of the Labourer as well as the Proprietor.*" We have no record of the outcome of these attempts to alleviate the condition of the industry, but, if any association or society was formed, it must have been abandoned on the outbreak of the Revolution.

EARLY PRICES OF IRON PRODUCTS

The prices at which iron products were sold in these early days is somewhat enlightening. Pearse quotes letters to show that the average price of Jersey bar iron was about twenty-four shillings per cwt.⁷ Acrelius records that

Pig-iron is sold at the furnaces for from £3 6s. 8d to £3 10s. per ton. Bar-iron at the forge brings £20 per ton, or 20s. per 100 pounds. It is sold dear, for six months' credit is given. Pig-iron is sold in Philadelphia at £5 per ton; bar-iron, in large quantities, at from £14 to £16 per ton. It certainly seems remarkable that the price is diminished after the long transportation to the city; but in this people find their profit.⁸

These prices cover the period of his visit to America 1750-1756.

During the Revolution the General Assembly of New Jersey passed an act (Dec. 10, 1777) which was adopted to curb profiteering. It was made a misdemeanor under heavy penalty to charge more than the following prices:

Pig Metal	20 shillings per cwt.
Bloomery bar iron.....	60 " " "
Refined " "	70 " " "
Rolling of iron.....	30 pounds per ton.
Open castings.....	8 pence per pound.

⁶ *New York Gazette and The Weekly Mercury*, Dec. 20, 1773, in *New Jersey Archives*, First Series, XXII, 145.

⁷ J. B. Pearse, *History of Iron Manufacture*, p. 57.

⁸ Israel Acrelius, *History of New Sweden*, p. 169.

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In order to stop the unscrupulous merchants from excessive charges, county committees were later chosen to fix reasonable prices for all commodities. The Burlington County Committee published the following prices for the month of August, 1779:

Bloomery iron at the works per ton	£450 — 0 — 0
Refined iron “ “ “ “ “	£600 — 0 — 0
In proportion by the cwt.	
Nail rod iron per hundred cwt.	£ 50 — 0 — 0

This was on the basis of depreciated Continental currency and, therefore, not comparable with the earlier quotations.

Moore Furman, Deputy Quartermaster-General of New Jersey, writing from Pittstown, New Jersey, to Colonel Howell under date of August 16, 1779, says:

I cannot hear of any Refined Iron at the price you mention. Suppose I can furnish some at about Six Hundred pounds and forward agreeable to your Desire as soon as Teams can be spared from the Commissary Service. If you cannot buy cheaper please let me know and I will endeavor to secure and forward what is to be had.⁹

In 1789, pig iron was sold by the Durham Iron Works to New Jersey forges at about £8 per ton and “stamped cinders” at £5 per ton, and these works took in payment for the raw materials, bar iron made from pig metal at £28 per ton, while bar iron made from “cinder-ore” was accepted at three pounds per ton less. Money being scarce, payment for iron, or “stamped cinders,” was frequently made in bar iron, or other products of the forge, the price being fixed so as to allow a small margin of profit over the cost of the raw material and the labor charges.

⁹ *Letters of Moore Furman*, p. 14.

THE AMERICAN IRON COMPANY ENTERPRISES

ONE of the outstanding factors in the development of the iron industry in New Jersey was The American Iron Company, or as it was generally called, "The London Company," whose official title was "Proprietors of the New-York and New-Jersey Iron Works."¹ It was one of the forerunners of the present gigantic consolidations of industrial enterprises, and far ahead of its time. The promoter of this combination was Peter Hasenclever, sometimes called "Baron" Hasenclever. He was a German, who after some business experience in Spain, went to London in 1763, where he formed the acquaintance of a number of prominent Englishmen. An investigation of the reported natural resources in America had convinced him that the Colonies afforded a wonderful field for establishing certain industries. He enlisted the support of a number of important personages, among them General Graeme, Commodore Forrest, Secretary of the Admiralty Jackson and, according to tradition, Queen Charlotte, wife of George III, together with many of her ladies in waiting. A company was then formed with Peter Hasenclever as resident general manager, with authority to spend not to exceed £40,000 in starting the various enterprises.

Among the industries which he intended to set up was an iron-works, and to that end, before leaving England, he made arrangements for transportation of a number of experienced German miners and ironworkers to America. These he sent over even before any properties on which to locate the works had been purchased, and for some months the company was compelled to support them in idleness.

Arriving in New York, he learned that the various iron interests of the Ogden family in Morris County, New Jersey, were being offered for sale, and he at once entered into negotiations which resulted in their ultimate purchase for £5,000.

Soon after making the purchase from the Ogdens, Hasenclever sent a memorial to the Board of Proprietors of East Jersey "setting

¹ John Hall, *History of the Presbyterian Church at Trenton*, p. 317.

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forth that he had lately arrived from Europe with the intention to prosecute the manufacture of iron in America, and had accordingly purchased the Ringwood Iron Works which were surrounded by a great quantity of vacant land of little or no use than to supply said iron works with wood, and that he was willing to purchase a suitable quantity on reasonable terms." A committee consisting of Messrs. Delancey and Rutherford, was appointed to examine the land in question and advise as to its value. This committee on September 14, 1764, reported "that Mr. Hasenclever wished 10,000 acres, or thereabouts, in five or six tracts on Long Pond River, not to exceed two miles distant from said river, or two miles from Ringwood furnace, and would give at the rate of £30 per 100 acres."

A year later (September 12, 1765), the committee again reported that they had viewed the land and said:

We find the land exceedingly rocky and mountainous. The mountains appear to be almost inaccessible along the river, some of them very bare of timber, others well timbered. In the whole tract we viewed we saw but two small pieces of swamp which were both taken up, and in the whole there did not appear to be fifty acres of plow land. The mountains . . . very rocky and steep make up a great proportion of the whole proposed to be purchased by Mr. H. . . . From the place we entered upon this view for near three miles we could not travel along the edge of the river, the mountains on both sides being so rocky and steep that it was impossible to climb up them. . . . In our opinion the land is entirely unfit for any purpose but that Mr. H. proposed to employ it in . . . it will be for the interest of the Board to accept his proposal.²

This in brief shows how the extensive tracts at Long Pond (now Greenwood Lake) and Ringwood were accumulated for the American Company.

Now began one of the most elaborate developments of industrial enterprises which the colony of New Jersey had seen, resulting in an outlay of over £54,000 before any tangible returns were made.³ This caused so much dissatisfaction among the members of the company that Hasenclever was finally discharged. Notwithstanding his downfall, it was generally admitted that he was a genius, and many of the methods which he introduced in the American Company's plants, especially the recovery of the iron in the old

² Quoted from William Roome, *Early Days and Early Surveys of East New Jersey*, p. 42.

³ "It is said that at one time they had in operation 24 forge fires and furnaces at Ringwood, Long Pond (now Greenwood Lake) and Charlotteburg." *Proceedings of New Jersey Historical Society*, New Series, IV, 57.

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cinder banks and the adoption of slate for the lining of the furnaces, were copied by all of his competitors and were continued by his successors. His troubles in America were greatly increased by the failure of the London firm of Hasenclever, Seton & Crofts, and in 1770 he was declared a bankrupt. Hasenclever had returned to London in 1769, but before his departure a Mr. Homfray (or Humphries), was designated as manager,⁴ soon however, to be displaced by Phillip Faesch.

An interesting phase of the activities of Peter Hasenclever and Company is to be found in a petition which they presented to the Earl of Shelbourne, one of the British Secretaries of State, dated January 28, 1767.⁵ After reciting that they had erected furnaces and forges on lands which they had purchased in New York and New Jersey and were producing iron that within a year or two they expected to make in "great Quantities of as good quality, as the best sorts brought from Sweeden: and as fit for the purposes of making Steel." The claim was made that they were not able to buy sufficient land "in convenient Situations" to provide constant employment for the people who had been brought from Germany. They desired therefore, to obtain title to a tract of land in Canada which had been taken by the British government at the time of the reduction of Montreal.

In view of the already extensive landholdings of the London Company in North Jersey, it is quite evident that this was merely a scheme for obtaining a tract of land at a nominal price or probably for no consideration. The petition, however, did not apparently meet favorable consideration by the King's ministers. Robert Erskine was sent from England in 1771 to manage the affairs of the company, and although handicapped by a poor organization, he soon had the plants on a fair way to prosperity. The impending difficulties between England and her American Colonies began to loom up, and the English stockholders refused to furnish any more capital to carry on the works. He was now compelled to finance the company through New York factors, among whom were Curson & Sexton and Read & Yates. As the difficulties between England and the Colonies increased, Erskine decided to sell the properties and return the proceeds to the owners in England, deeming it the only logical course that he, as the Company's representative, could take.⁶

⁴ *New York Gazette and The Weekly Mercury*, Sept. 21, 1772.

⁵ *New Jersey Archives*, First Series, IX, 583-86.

⁶ See A. H. Heuser, *The Forgotten General*, for many of the details of Erskine's life.

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In carrying out this policy several notices appeared in the newspapers during 1772-73, offering to sell or lease, either as a whole or separately, the works at Charlotteburg, Long Pond, and Ringwood, and notifying all persons indebted to The American Company to make payment at once to either Read & Yates in New York or Robert Erskine on the premises.⁷ The notice of September 21, 1772, also contained a full account of the several works as made under instructions from Governor William Franklin by Lord Sterling, James Gray, Thenius Day, and Colonel John Schuyler, and is quoted in full in the *New Jersey Archives*, First Series, Vol. XXVIII, pp. 246-253.

Dr. Tuttle in his article, "History of Morris County, New Jersey,"⁸ says:

It is a popular and widely believed tradition, that the English government, believing that the Americans were mainly dependent on the London Company's works for iron, made an arrangement with the Company to destroy them, in order to injure the Colonies in the difficulties which were evidently approaching. It is very possible that some such proposition may have been made, but the only evidence I can find at any attempt to carry it out is in the destruction of the works at Charlotteburgh, and the fact stated to me by some old men, that in the forests about those works, they have often seen coal-pits, which seem to have been burned down many years before, but the coal was not used, showing a violent suspension of business at some time. Those works were destroyed and the common belief is that it was done by direction of the Home Company. Still it must be admitted that the basis of the rumor is quite shadowy.

In 1773, Hasenclever published a long pamphlet in defense of his course in the conduct of the American Company, to which Robert Erskine through the Colonial papers issued a reply embodying much information as to the difficulties which he encountered on assuming the management of the company.

Robert Erskine, at the outbreak of the Revolution took sides actively with the colonies, and on the organization of a military company among the men employed at the iron works was commissioned by the Provincial Congress of New Jersey as captain of the same.⁹ The principal object in forming this company was to keep the men together so that they would not be drafted into the state militia and ordered outside the county. The company

⁷ *New York Gazette and The Weekly Mercury*, September 21, 1772.

⁸ *Proceedings of New Jersey Historical Society*, Second Series, II, 26-27.

⁹ This action was taken on August 17, 1775.

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itself was soon exempted from military duty except in case of invasion.

On July 27, 1777, Erskine was commissioned Geographer and Surveyor General of the Continental Army because of his familiarity with the country west of the Hudson River. He had, indeed, made some maps for Washington before receiving his commission. The Commander-in-Chief in his letter to Congress recommending the appointment of a geographer for the army said of Erskine that he "is thoroughly skilled in this business and has already assisted us in making maps of the country." While holding this office Erskine made a series of maps of the region around New York, showing every stream, road, house, and elevation.

While engaged in laying down various roads and routes of travel in advance of their being actually required by the army, Erskine was taken with a severe cold which developed into a fever from which he died on October 2, 1780, at the age of forty-six, the same day on which Major André was executed at Tappan, not many miles distant.

The will of Robert Erskine, which was dated March 28, 1779, for some unexplained reason was probated before the Gloucester County Court, while his widow qualified as executrix in Bergen County. No real estate was conveyed by the will.

In 1781, his widow married Robert Lettis Hooper, Jr. The ironworks, in accordance with Erskine's expressed wish, were kept in operation for a time. Finally, upon petition of Hooper and his wife, the Legislature enacted a special Confiscation Act under which the property could be seized by the Commissioners of Forfeited Estates, the real title still being vested in the London stockholders. The act was not to apply to the American owners: It was provided further, that the "power of agency" should be vested in Robert Lettis Hooper the younger and his wife Elizabeth (Erskine) Hooper, with authority to manage the estate. The reason given in the petition of Hooper and his wife was that the accounts of the company were so blended and interwoven with the personal concerns of Robert Erskine, deceased, that the books could not be turned over to the agents of the company without risk and detriment to the estate. Under the act, the Hoopers were required to submit their accounts annually, or oftener if required, to the Legislature for such order or disposition as it might make, but they were entitled to such allowances for their expenses as was authorized under the Confiscation Act.

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In 1783, Hooper offered for sale:

Refined bar-iron, forge and furnace plates, forge hammers and anvils, cart and wagon-boxes, whip-saw plates, . . . also a large assortment of furnace and forge tools, blacksmith's bel-lows, bickhorns, vises and hammers, . . .

New Jersey Journal, April 23, 1783

He also published the customary notice, when a business is being wound up, that "all who are indebted to the American Ringwood Company by bond, note or otherwise are requested to pay off their balances at Ringwood before the first day of May next."

Soon after the appearance of this last advertisement Robert Lettis Hooper, Jr. moved to Belleville, his estate near Trenton. In 1785, he was elected vice president of the Legislative Council, succeeding John Cleves Symmes who had recently been appointed to Congress.

The properties of the American Iron Company will now be taken up individually in the following order:

Ringwood Furnace and Forges
Charlotteburg Furnace and Forges
Long Pond Furnace and Forge.

RINGWOOD FURNACE AND FORGES

*Bergen County*¹

now

Passaic County

Ringwood Furnace was located on the northerly branch of the Pequannock River, called Ringwood River, and occupied the site of a small forge built by Cornelius Board about 1739. This tract, which is described in Board's will (1744-45) as "the small tract that I formerly sold to Oggdins, called the Falls of the County of Bergen." The "Oggdins" mentioned in this quotation were Colonel Josiah Ogden, David Ogden, Sr., David Ogden, Jr., John Ogden Jr., and Judge Uzal Ogden, who on April 15, 1740, purchased sixteen acres of land at Ringwood, including the old forge, for £63. The purchasers, who were at the time all residents of Newark, formed The Ringwood Company and soon afterwards (1742) erected a furnace.²

¹ Original county in which these ironworks were built.

² *Proceedings of New Jersey Historical Society*, New Series, IV, 57.

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The Ogdens as early as 1742 had surveys made along nearly all the streams in the northern parts of Passaic and Morris counties, and took up many tracts along both sides of these streams, extending back ten or fifteen rods. This gave them water-power rights, in some instances extending for a half to a mile on the water course. Parts of the Pequannock and Wanaque Rivers, Fisher's Brook, and Long Pond were thereby pre-empted by them, and title to the land on which many of the early forges in this region stood emanate from various members of the Ogden family.

The product of this plant was advertised as follows:

TO BE SOLD
BY NICHOLAS GOUVERNEUR

Ringwood refined and stamp'd Bar Iron, and Share Moulds. The Quality of which Iron being tough and hard, is very fit for Ship Building and County Work, and is esteem'd equal to the best of Sweedish Iron.

Pennsylvania Journal, May 24, 1759

The works continued active for more than twenty years, and during that time did an extensive business. William Nelson quotes from a letter written by David Ogden in 1761, and dated at Newark, in which he acknowledges an order for "5 Tonns Comon Iron and 3 Tunns of flat $3\frac{1}{2}$ Inch."³ The letter states that they were not making any flat iron of that size at the works, but from it we learn that "Cast Tire from 3 to $3\frac{1}{4}$ Inches fetches from 40s. to £3 P. Tun more than other Iron" and that he therefore quotes £38 per ton for that kind of iron.

In view of subsequent events it is not known why the Ringwood Company purchased additional lands in 1764. However, the records show that on February 1 of that year Joseph Board conveyed to the company a tract of land "near the old forge and dwelling house of Walter Erwin," and on the same day sold to Nicholas Gouverneur of New York, and David Ogden, Sr., six and one-half acres of land for £16 10s.

The advertisement which attracted Hasenclever's attention to these works appeared in newspapers in 1764 as follows:

To be sold, a new well-built furnace, good iron mines near the same, two forges, one with 3, and the other with 2 fires; a saw mill, several dwelling-houses and coal-houses, and several tracts of land adjoining; carts, waggons, utensils and tools proper for the works: The furnace and forges are situated on

³ *Proceedings of New Jersey Historical Society*, Second Series, XI, 126.

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a good stream, 28 miles from Acquackanung landing, and 36 miles from Newark. Whoever inclines to purchase the same, may apply to Nicholas Gouverneur, in New-York or to David Ogden, jun. at Newark, who will agree for the same.

New York Mercury, March 5, 1764.

Hasenclever made Ringwood his principal works, and the German emigrants whom he had imported were sent to build the new furnace and open up the mines. He seems to have had difficulty to keep these newcomers entirely satisfied, and very shortly seven miners ran away. His advertisement gives an idea of the workmen he brought over.

They are all Germans, and talk very little English, had on when they went away soldiers jackets, and carried with them, their miner's clothes black turn'd up with red, likewise guns and hammers.

As these men are still engaged by contract for 3 years and 4 months, and have been brought into this country from Europe at a very great expence, all gentlemen, well-wishers to their country, are respectfully desired not to engage these people in their service, etc. etc.

New York Gazette or Weekly Post Boy, June 5, 1766.

George Brown, the jailer at Trenton, placed a notice in the *New York Gazette or Weekly Post Boy*, July 10, 1766, that he had taken up five of the runaways for which Hasenclever had advertised and that they could be had upon the payment of charges. If not claimed within five weeks they were to be sold "to pay their Charges." A later advertisement for men read as follows:

Wanted, at Ringwood, Iron-Works,
In the JERSIES

SOBER Men that understand driving a Horse Team; any such, of good Character, will meet with Employment, in that way, by applying as above.

New York Gazette and The Weekly Mercury, September 12, 1768.

When Hasenclever first took over the Ringwood Iron Works he found them in a dilapidated condition. In order to provide water power at all seasons of the year, he made a large reservoir by building an immense dam across the lower end of Taxito Pond (now Tuxedo Lake). The dam was 860 feet in length and from twelve to twenty-two feet in height. By means of a canal, he led the water to various points along the Pequannock River where he proposed locating the furnaces, forges, and mills. This is said

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to have been the first attempt in America to conserve and store water in the rainy season so as to supply industrial establishments during the dry period of midsummer.

The furnace had a capacity of twenty to twenty-five tons of pig iron a week, and its period of activity was about nine months in a year. Within fifty yards of the furnace was a forge of three fires and two hammers and a stamping mill. Another forge of four fires and two hammers was situated about five hundred yards above the furnace, and adjacent to it was a sawmill. There were two other forges connected with the works, one about half a mile below the furnace, in which were two fires and a hammer, and the other two miles down the river, containing two fires and two hammers. Hasenclever had also provided all the necessary buildings and cabins for the workmen, as well as a gristmill and storehouses.

It was estimated that each four-fire forge, working single shift, would produce 250 tons of bar iron annually and, as there were eleven fires, the total capacity of the works was approximately 700 tons a year, which took the entire output of the furnace.

The report of Governor Franklin's committee on the American Company's properties, mentioned on page 15, gives a very interesting account of the sources of the iron ore which supplied these works. It appears that some of the mines or ore beds on which he had relied soon worked out, others abounded in too much sulphur or copper, or proved to be "coalshear."⁴ However, by drawing the water off the Peters Mine and by the discovery of the Good Hope Mine in July, 1767, sufficient ore for an indefinite period was located. Borings showed that the Good Hope vein extended for nearly a mile in length and in some places had a breadth of fourteen feet.

One of the expensive parts of this project was the construction of roads so that the ore, "coals," and supplies could be brought to the works. This included blasting through solid rock in many places, the filling up of swampy spots in others, and the building of a number of bridges over creeks and ravines.

In the account of this property Erskine himself in 1771 wrote that the situation at Ringwood was "tolerable," but that there was nothing enchanting about it. He wrote: "The furnace is in blast, but the bellows are old and not as good as that at the other works, which were built under Mr. Faesch's direction, whereas

⁴ Evidently our term "cold short," meaning an excessive percentage of phosphorus which imparts a brittleness to the resultant iron.

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Ringwood is a works of thirty years standing. There the water-wheel is exposed: but at Charlotteburg, etc., the wheel is under cover, and by means of stoves may be kept in motion when the frosts are pretty severe."

Erskine's first task, after becoming acquainted with the properties, was to reorganize and coördinate the various works. During this period, little profit could be made for the London stockholders, in consequence of which they soon refused to supply any more money to carry on, and he was compelled to shift for himself. After two years of hard work, he appears to have become discouraged and, according to an advertisement in the *New York Gazette and The Weekly Mercury*, of September 21, 1772, we learn that he was ready to receive "Proposals either for the sale or lease of the well known Works of CHARLOTTEBURG, LONG-POND and RINGWOOD." This step undoubtedly had the approval of the London stockholders, as Read & Yates of New York, the factors for the syndicate, were at that time acting with Erskine. Finding no purchasers, he entered into a contract with Curson & Seaton by which they were to assist him in carrying on the Works, and agreed to provide goods and accept drafts not to exceed £400 per month. This arrangement was made in the latter part of the year 1773, but only lasted a few months. Again thrown on his own resources, he managed in some way to keep the works going until the outbreak of the Revolution, when he entered actively into preparing men and material for the coming struggle. Through the *New York Gazette and The Weekly Mercury*, of May 15, 1775, he issued a notice that the notes issued from the stores of the Ringwood, Long Pond, and Charlotteburg Iron Works would be taken in payment for bar iron at the market price and that all the notes issued in October, 1774, would be exchanged for provincial money on demand, at twelve months from their date, if presented to the amount of forty shillings or upwards.

Having reached the stage where he had been deserted by the London owners, and having had a sad experience with at least one New York factor, he decided to bear the financial burden himself. On June 10, 1776, he offered for sale at the store "near Whitehall Ferry Stairs, New York," refined bar iron and flat and square bars. He also essayed to execute orders for mill irons, rudder iron and forgings made to patterns. There are a number of entries in the American Company books of iron products made for the Continental Congress, including portable camp ovens and iron for the defenses of the Hudson River.

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The isolation and consequent security of the Ringwood region from attack by the marauding British and Hessian troops made it a desirable locality for the collection and storage of camp necessities at the time when the Continental Troops were watching the movements of the British army in and around New York. In 1779 a supply base was established at the ironworks, as evidenced by a letter written by Deputy Quartermaster General Moore Furman, of New Jersey to David Banks, Assistant Quartermaster at Newark, N. J.:

Pitts Town, September 27th, 1779.

Sir:

I have received notice of a considerable Magazine of Provisions ordered to be Formed at Ringwood Iron Works (but this to yourself) and that a Quantity of Forage will also be wanted there which is Scarce in that Neighborhood. As you are the Nearest District to that of all I have thot. it best to order on what you can spare. I wrote Mr. Marsh not to press any more Hay in his District and to let a set of Hands go on to you that it may be pressed & forwarded before the bad Weather & Roads prevent it— . . . ⁵

During the period of the Revolution, title to the property was vested in the English stockholders of the company, and there is no record to indicate that the Commissioners of Forfeited Estates ever attempted to seize the same. It is quite likely that this was due to the influence which Erskine had in the community.

After his death the property was managed by his widow, soon to be assisted by her second husband, Robert Lettis Hooper, Jr. As already noted, the personal property was offered for sale in 1783. Evidently the Hoopers did not exercise the authority granted them by the Legislature to lease the property, for in 1795, Phineas Bond, as attorney for the trustees of the American Company, negotiated a sale of the Ringwood Estate with James Old, one of the famous early ironmasters of Pennsylvania. The payments not being met, the Sheriff of Bergen County sold the property for taxes and again, in 1803, it was advertised for sale. About 1807, Martin Ryerson acquired title, and until his death in 1839 operated the mines and ironworks with marked financial success. It was continued by Ryerson's sons until 1853, when it was sold under sheriff deed to Peter Cooper, and subsequently passed to Cooper Hewitt & Co., Abram S. Hewitt and then to his heirs. Recently the Peters Mine, which Erskine considered the best of all the

⁵ *Letters of Moore Furman*, p. 20.

American Iron Company

Ringwood mines, and the Cannon Mine, also in the same group, have been reopened by the Ringwood Corporation.

CHARLOTTEBURG FURNACE AND FORGES

Bergen County

now

Passaic County

Charlotteburg¹ Furnace, located on the west branch of Pequannock River, was built by Peter Hasenclever for the American Company in 1767-68. It was said to have been one of the best works of this kind in America at that period. The furnace when in blast was capable of making twenty to twenty-five tons of pig iron weekly, and as the raw materials were all near by it could be operated very cheaply. The water supply was taken from the river, and to insure power at all times the Makapin and Dunken ponds were impounded and kept in reserve.

Besides the furnace, there were two forges, each of four fires and two hammers, and each one was capable of making 250 tons of bar iron yearly, "single handed," or from 300 to 350 tons "double handed."

Hasenclever spared no expense in building this plant and cut roads through solid rock, making "places which before were inaccessible, even to horsemen, on account of the steepness of the rocks and mountains, now good carriage roads."

Before Robert Erskine took over the management of all the American Company properties, John Jacob Faesch had been superintendent of the Charlotteburg plant and continued there for some time under the new management. According to Erskine, this was the best of the American Iron Works properties and was built under the direct supervision of Faesch. The furnace obtained its ore from the Hibernia Mine, which was six or seven miles away. Three shillings per ton royalty had to be paid to Lord Sterling. In November, 1772, Erskine announced in the *New York Gazette and The Weekly Mercury* that certain orders drawn on Reade & Yates of New York, agents of the American Iron Works, had been lost and payment stopped. These orders were drawn by John Jacob Faesch for account of Charlotteburg Iron Works, which

¹ Often spelled "Charlottenburg" in the early records.

New Jersey Forges and Furnaces

would prove that he had not yet entirely severed his connections with the American Company.

Two advertisements relating to workmen at the plant are interesting as showing the kind of workers wanted and the wages paid for certain types of labor. The first one was in September, 1772, and called for ore carters, the ore coming from the Hibernia Mine. The pay was 10s 6d per ton, New York money, if they begin carting before October 10th; 10s per ton, if they begin after that date, and 9s per ton in sleighing time, but if the carters worked only in sleighing time, they were to be paid 8s per ton. They were to cart not less than three tons a week until the total quantity equalled thirty tons. The second advertisement read as follows:

A Few good forgemmen, may hear of constant employment and sure pay, by applying at Charlotteburg Iron Works, New-Jersey. N. B. Those who are Germans, or who can work in the German way, shall be preferred.

New York Gazette, July 12, 1773.

The plant was burned down in 1776 and never rebuilt. In 1840, G. H. Renton of Newark built a bloomery and rolling mill on the site of the old Charlotteburg furnace.²

LONG POND FURNACE AND FORGE

Bergen County

now

Passaic County

The Long Pond Furnace was established by Peter Hasenclever in 1768. It was located about three miles southwest of Ringwood Furnace on a stream which flows out of Long Pond (now called Greenwood Lake), called Long Pond River, or "Iron Works or Furnace River," and empties into Ringwood River about four miles below the furnace.

Again we have to refer to the report of Governor Franklin's committee for a detailed description of this part of the American Company's property. At the outlet to Long Pond, or Greenwood Lake, Hasenclever built a dam 200 feet in length and five feet in height, and from this the water was carried to the works about

² J. L. Bishop, *History of American Manufactures*, I, 543.

American Iron Company

two miles below the dam. The plant consisted of a blast furnace which had a capacity of twenty to twenty-five tons of pig iron weekly and a forge of four fires and two hammers, capable of making about the same quantity of bar iron as either of the forges at Charlotteburg or Ringwood.

The ore for the furnace came from the Peters and the Good Hope Mines, about three miles away. The roads, as at the other plants, were made at great expense, running along the sides of rocky mountains in some places and, in others, through deep swamps and gullies "which could only be rendered passable by bridging them with timber."

Erskine said in 1771 that Long Pond Furnace was much better than Ringwood and its situation more advantageous—being free from "damps," etc.

After the American Company properties passed into the hands of Robert Lettis Hooper, Jr., it appears that Long Pond Furnace and Forge were discontinued and the materials taken to Ringwood. Exactly when this occurred is not known, but it can safely be put down as between the years 1776 and 1781.

ANDOVER IRON WORKS OR WATERLOO FORGE

Sussex County

THE tract of land on which the Andover Furnace was erected was part of a survey made under a warrant dated March 10, 1714, from the Proprietors of West Jersey to William Penn, whose large interests in West Jersey entitled him to extensive tracts of unlocated lands under each of the dividends declared on proprietary shares. Of this tract about eleven thousand acres were subsequently acquired by William Allen and Joseph Turner, both of Philadelphia. On a branch of the Pequest River they built a blast furnace and forge in 1760, to which the name Andover was given, in honor of the birthplace of Joseph Turner in Hampshire, England. These works were managed by Colonel John Hackett until his death in 1766.¹ During the operation of the works under Colonel Hackett, a number of parcels of land were purchased by him for account of Allen and Turner, the title to them, however, being taken in his own name. On Hackett's death it became necessary to obtain a special act of the legislature "to vest in them" (the proprietors) "the legal title to sundry tracts and Proprietary Rights." The petition for this relief stated that it was with their consent that Colonel Hackett had made the purchases in this manner.

Colonel Hackett, from whom Hackettstown derived its name, was a prominent man in this section of New Jersey and closely associated with many of the landed proprietors. He married Elizabeth, daughter of John Reading, a member of the Provincial Council and for some months Acting Governor of the Colony.

John Reading, Sr., was a very large landowner in West Jersey and a prominent member of the Council of Proprietors. After his home at Gloucester was destroyed by fire in 1711, he moved to a tract of land above Lambertville, in Hunterdon County, where

¹ See *New Jersey Archives*, First Series, XXV, 243, for an advertisement of the administrators of his estate, and XXXIII, 168, for a memorandum of his will.

Andover Iron Works

he resided during the remainder of his life. The son later purchased 600 acres on the south bank of the Raritan River near Flemington. It was undoubtedly because of the prominence and influence of his father-in-law that John Hackett was authorized by Allen and Turner to make the purchases of lands in his own name, since they were in bad repute with the small landowners on account of their attempts to collect quit-rents in the territory which they had purchased in West Jersey.

The best description of the Andover Furnace is found in an advertisement of 1770:

To be LETT for a Term of YEARS.

Andover Furnace, situate in the County of Sussex, in West New-Jersey, on a Branch of Paquest River, together with an elegant Stone Dwelling-house, Stables, Smith's Shop, Spring-house, and a Number of Outhouses for Workmen; a large Coal-house in which there is at least 7 Week's Stock of Coals for the next Blast; also 5000 acres of well timbered Land to accomodate the Furnace, . . . Scarcely a Mile from the Furnace is an inexhaustible Body of Ore, which may be raised at the easy Expence of 2s. per Ton, and makes Iron of a superior Quality to any other in America, particularly for the Manufacture of Steel. . . . For the Terms, apply to Mr. ARCHIBALD STEWART, who lives at the said Furnace, or to Messieurs ALLEN and TURNER, in Philadelphia.

Pennsylvania Gazette, October 4, 1770.

In 1769, when William Allen drew his will, he was the owner of a five-sixths interest in Andover Furnace, the other partners being Lynford Lardner, Joseph Turner, and Benjamin Chew. The chief significance in this joint ownership is the fact that Lynford Lardner, who married a daughter of William Branson of Coventry and Windsor Forges in Pennsylvania, was a brother-in-law of Samuel Fowler, at one time one of the lessees of Durham Furnace. Lardner and Chew were both members of the Governor's Council of Pennsylvania and members of the Gloucester Fox Hunting Club, one of the famous organizations of that day. Lardner Point on the Delaware River was the seat of his country house. He was an aristocrat, and had he been living at the time of the Revolution (he died in 1774) would undoubtedly have suffered the fate of Governor Penn and Benjamin Chew, as described under Union Iron Works. He was also closely associated with Richard Hockley and Samuel Fowler in iron furnaces in Pennsylvania.

Andover pig iron had quite a reputation and was sold extensively under its branded name, as is indicated by the following

New Jersey Forges and Furnaces

advertisements which appeared in the New York newspapers in 1773 and 1774.

ANDOVER PIG-METAL,

To be sold by the subscriber, at Elizabeth-Town. Gentlemen in New York may be supplied with any quantity, on giving the shortest notice to

JOHN BLANCHARD.

Supplement to the
New York Gazette and The Weekly Mercury, March 1, 1773.

ANDOVER BAR IRON

TO BE SOLD

By James and Alexander Stewart,
On Cruger's Wharf.
Rivington's New York Gazetteer, March 10, 1774.

JAMES AND ALEXANDER STEWART,

On Cruger's Wharf, have for sale, Andover bar-iron, neatly drawn and warranted genuine; likewise Andover pig-iron, any quantity of which can be delivered on the shortest notice.

Pennsylvania Gazette, June 29, 1774

Both William Allen and Joseph Turner were loyalists and, to save their properties, transferred many of them to other members of the family, or to friends. These works, however, were closed up early in the Revolution by the state authorities. In the latter part of 1777, the Quartermaster's Department of the American Army began to experience much difficulty in securing satisfactory iron for its artificers. Finally the following resolution was adopted by Congress on January 5, 1778:²

Resolved,

That the Board of War be authorized to direct Coll. Flower to make a Contract with Mr. Whitehead Humphreys³ on the terms of the former agreement or such other as Coll. Flower shall deem equitable, for making a quantity of Steel for the supply of the Continental artificers and works with that necessary article; and as the Iron made at the Andover Works only with Certainty answer the purpose of making Steel, Coll. Flower be directed to apply to the Government of New Jersey to put a proper person in possession of these works (the same

² *Pennsylvania Archives*, First Series vi, 178. Governor Livingston in his message to the General Assembly of February 16, 1778 says it was adopted on January 15, 1778.

³ Whitehead Humphreys had a steel furnace on Seventh Street in Philadelphia in 1770 and was an expert on the manufacture of edge tools (Swank).

Andover Iron Works

belonging to persons who adhere to the enemies of these States) upon such terms as the Government of the State of New Jersey shall think proper; and that Col. Flower contract with the said person for such quantity of iron as he shall think the service requires.

Governor Livingston, in transmitting this resolution to the General Assembly, made the following comments:

As good steel is an article so indispensably necessary not only for the purpose of war, but those of internal husbandry, and it is said that Andover iron is better suited to this business than any other in America, I doubt not you will readily comply with the expectations of the Congress in this respect.

I cannot upon this occasion help remarking that as no articles whatsoever can with less difficulty be dispensed with in military operations than iron and steel, you will find upon the slightest recollection, that none of our citizens are more generally disaffected than those who are interested or employed in the manufacturing of iron. A strong presumption that the enemy had been particularly industrious in corrupting these men, with a view to distress us in a most essential point.

New Jersey Gazette, March 4, 1778.

It was found impossible to treat with the owners, and the following appeal was made to Governor Livingston to obtain possession of the works.

War Office, May 25, 1778.

The Board not having thought proper to agree with Col. John Patton⁴ for the carrying on the Andover Iron Works, have instructed Col. Flower to apply to the government of your state and procure possession of the Works for Col. Thomas Maybury, with whom the terms of the contract are settled, on condition of his getting the possession agreeably to the resolution of Congress. As we find it absolutely necessary to put these works in blast, the Board beg the favor of your Excellency to assist Col. Flower⁵ or Col. Maybury in the business;

⁴ Colonel Patton was a man of considerable prominence in Revolutionary days. In August, 1775, he was appointed a member of the Committee of Inspection and Observation, one of the important agencies immediately preceding the Declaration of Independence. When the war became imminent he was made major of Miles' Pennsylvania Rifle Regiment and later occupied the same rank in the Ninth Pennsylvania Regiment. When sixteen additional regiments were raised for the Continental Army, early in 1777, he was made a colonel, but resigned his commission on February 3, 1778.

⁵ Colonel Benjamin Flower was Commissary of Military Stores under the Board of War and was in command of a regiment of artillery artificers whose duties were to cast cannon, bore guns and prepare ammunition for the army. He was with General Washington at Morristown, New Jersey, in January, 1777, and was active in re-equipping the Continental troops during their encampment at that place. He died in 1781 at the age of thirty-three.

New Jersey Forges and Furnaces

they will necessarily have to have such, relative to these works with the government of your state.

I have the honor to be, with great esteem, your very obed't serv't,

By order of the Board,
RICHARD PETERS

His Excellency, Gov. Livingston.⁶

Colonel Thomas Maybury was put in charge of the furnace, and under his supervision considerable quantities of pig iron were furnished the American ironworkers. Exactly how long it was operated under the direction of the Board of War is not known. Hon. Jacob W. Miller in an address made in 1854 said the government retained possession until the close of the war, but this statement is clearly not correct, as will be shown.

In June 1777, Lewis Weiss in Second Street, Philadelphia, offered for sale a one-fourth interest in the Andover Iron Works, including between eleven and twelve thousand acres of land. It was stated that the "mine bank, situated at a mile's distance from the furnace is thought to be inexhaustible." The property, under the term "Andover Iron Works," included both the furnace and the forge, which were about seven miles apart. Work in the plant was, however, discontinued about 1780, and it was then offered for rent, as the following notice indicates:

TO BE LETT

ANDOVER FURNACE and FORGE

Situate in County of Sussex, New-Jersey.

They are now in good repair, and may be entered upon immediatly:

And a large QUANTITY of WOOD ready cut,

For terms apply to ARCHIBALD STEWART at Hacket's town, or to JOHN LARDNER in Philadelphia.

N. B. Some NEGROES belonging to said Works, To be SOLD.

Pennsylvania Packet, December 2, 1780.

It is generally stated that the works were entirely abandoned until about 1847, when Cooper & Hewitt revived them. This, no doubt, refers to the furnace only.

Allen and Turner, after they had built the Andover Furnace, erected a forge on the Musconetcong Creek, at Waterloo, in 1763, where they worked up the ore from the Rossville Mine, as well as pig iron from Andover Furnace.

⁶ *Correspondence of the Executive of New Jersey, 1776-1786*, p. 113.

Andover Iron Works

The best account of the forge is found in an advertisement which appeared in 1770, and read as follows:

To be Lett also, a large FORGE, in excellent Order, with 4 Fires, and 2 Hammers, in the County of Sussex, situate on Muscomiung River, about 7 miles from Andover Furnace, and 35 miles distant from New Brunswick and Elizabeth-town Landings. Five Thousand Acres of well-timbered Land, Part lying in the County of Sussex, and Part in the County of Morris, very convenient to the Forge, will be rented with it; also a Grist-mill, Saw-mill, commodious Houses for a Manager and Forgerman, and 70 Tons of Pig-metal on the Bank, with more than a Sufficiency of Coal to work it up; . . . The Owners have six Negroe Slaves to hire out or sell, who are good Forgermen, and understand the making and drawing of Iron well. . . . For Terms, apply to as above.

N. B. ALLEN and TURNER will lett, for a Term of Years, their SLITTING MILLS and FORGE with, or without, a FURNACE, together with all the Implements and Conveniences necessary for carrying on the IRON-BUSINESS; being the noted Union Iron-Work, in Hunterdon County, in West-Jersey, about 30 Miles nearer Philadelphia than Andover Iron-Work, etc. . . .

Pennsylvania Gazette, October 4, 1770.

In 1784, Mary Allen, widow of John Allen, son of William, petitioned the legislature of New Jersey to enact a law granting her the right to sell the interest of her minor children in the Andover Iron Works.⁷ In the petition it is stated that the five-sixteenths interest in the property was devised by William Allen, Esq., to his grandsons and that the other shares were owned by Benjamin Chew, Margaret Smith, and the four children of Lynford Lardner. Several unsuccessful attempts had been made to dispose of "some of the Part owners of the said Lands." The difficulty in effecting the sale because "The Estate of the Andover Iron Works and Lands in its nature [is] indivisible the mine of Ore the Mill Seats even the Works and Workmen are in proportion to the whole as much and no more than what belongeth thereto." While the legislature authorized Mary Allen to sell the interests of her minor children, John and William, it is not known what disposition was made of the property.

As it was closely connected with the Andover Furnace, the two works were often mentioned as the "Old Andover Furnace and Forge." According to the *Dover History* it was operated by Lemuel DeCamp in 1816.

⁷ The original petition is in the Public Record Office, Trenton, N. J.

New Jersey Forges and Furnaces

The last official notice of the Andover Furnace and Forge is contained in an act of the General Assembly, passed November 21, 1808, authorizing the appointment of commissioners to divide the lands known as the "Andover Furnace and Forge Tract . . . into such and as many shares as the same were originally held by the Andover Company or original owners thereof."

BEMAN'S OR WHITE MEADOW FORGE

Morris County

THE Beman or White Meadow Forge, located on the Rockaway River, was built by David Beman and Thomas Miller in 1753. In old deeds it is mentioned as being in existence in 1754, and is then called "David Beman's iron works." Under date of July 9, 1766, in a paper signed by Lord Sterling, mention is made of some lands which were "about three-quarters of a mile above David Beman's Iron Works."¹ In the *New York Mercury*, March 2, 1767, "the noted forge or iron works, called Beman's Forge," was advertised for sale and was described as follows:

said forge has two fires, and water at all seasons plenty; there is good oar, within three miles of the forge. Also to be sold at the same time, a good new grist-mill, and saw-mill, adjoining the above forge. . . . The above premises are all together, and within a Quarter of a mile of Rocaway meeting-house,² the situation very convenient for any publick Business, as the Hibernia furnace is within four miles; the said forge may with ease be made a refinery.

An interest in the works was purchased by John and Aaron Bigelow, in 1769. On October 18, 1774, the Bigelows gave a mortgage covering a tract of one hundred forty-two and one-half acres of land and one of the two forge fires, being their one-half interest in the forge. The particular fire covered by the mortgage was called "The water fire," because it was the one nearest to the dam. Of the other half, which was held by David Beman, John Jacob Faesch obtained title January 22, 1780, the consideration being £3800, current money of New Jersey.³ In the deed it was described as a bloomery forge standing on Rockaway River near the Rockaway Meeting House and was known as the Rockaway Old Forge.

¹ *Tuttle Papers*, in the State Library, Trenton, New Jersey, p. 246.

² The Rockaway meeting house here mentioned was the First Presbyterian Church of Rockaway, which was erected 1758-60. Its location is described in the first agreement for its buildings as "upon the small plain a letel above bemans forg which is below the first small brok upon that rode up to Samuel Johnson." It was a very plain structure with no ceiling, plastering or fire place, and the early seats were planks supported on blocks of wood.

³ S. S. O. *Deed Book, A L*, p. 297.

New Jersey Forges and Furnaces

The next owner was Abraham Kitchel, who obtained title in 1791. He was later associated with his son, Ford Kitchel, and assessed for one forge fire. The next transfer was in 1792 from Kitchel to Bernard Smith, who operated it for about ten years, when it was bought by Israel Canfield. It was later operated by Colonel Thomas Muir in connection with Muir's or Guinea Forge.⁴

⁴ Munsell & Co., *History of Morris County*, p. 43.

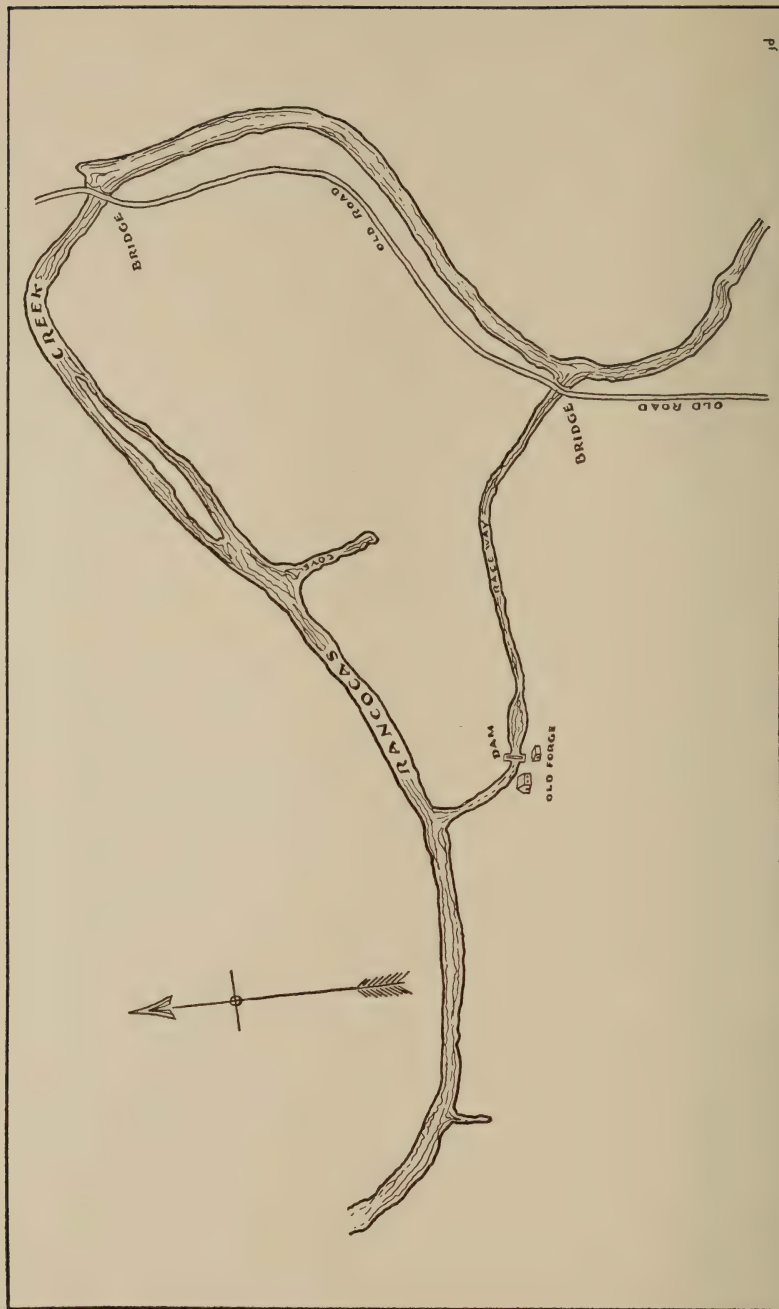
BIRMINGHAM AND RETREAT FORGE

Burlington County

THERE is little authentic data on the origin of the ironworks at Birmingham, which were located on the north branch of Rancocas Creek, a few miles west of Pemberton. The place itself is frequently mentioned in the tax duplicates and is there called "Brumingham," but no forge or furnace is specifically assessed at Birmingham in any of the tax duplicates so far located. Tradition says that it was built before the Revolution, but this statement is quite unlikely. From an old map recently located among the records in the files of the Burlington County Search Company, the forge is shown as located about four hundred feet south of the old road bridge across the raceway.

From the best information, it is believed that the Birmingham Forge was started about 1800 by Bolton and Jones, and that it contained four forge fires. In 1808, when the wood around the Birmingham plant was exhausted, they went further into the pine woods and set up two of the forge fires on a "feeder" of the south branch of the Rancocas Creek, called Friendship Creek, naming the place Retreat, and later it was called Retreat Factory.¹ The site of this forge is a little more than two miles southeast of Vincentown, just off the road from that place to Sooy's tavern. In the assessor's report for 1809, we find Retreat Forge specifically mentioned and, at the same time, learn that Bolton and Jones were taxed on four forge fires in two works. From this we can infer that the Birmingham plant may have still been in operation, especially as we find immediately following the names of Bolton and Jones, the names of a number of the heads of families listed for assessment at a place called Brumingham. The records for the years 1810-1812 are lost, but for the years 1813-1814 John Bolton is named as the owner of Retreat Forge with two forge fires, no forges being taxed during these years at Birmingham. According to Gordon, a cupola furnace was in operation in 1832 at Birming-

¹ In a return of a road laid out on November 24, 1817, one of the points mentioned is Retreat Factory from which we can infer that the forge was changed to a cotton mill, and on Thomas Gordon's map of 1828 it is shown as a mill or factory.



Birmingham Forge

ham.² This was probably a later enterprise and was, likely, merely a foundry for making castings.

The site of the Retreat Forge is marked by distinct depressions in the ground around which can still be located many pieces of slag. Pieces of pig iron have, from time to time, been picked up along the road over which the raw material and finished products were carried. This road may still be traced through the tangled brush and thorns.

The writer recently obtained the back plate of a five- or six-plate stove which was dug up in the vicinity of Retreat Forge. It shows some attempted decorations on the lower part of the plate, but otherwise is perfectly plain.

² T. F. Gordon, *Gazetteer of New Jersey*, p. 104.

BLACK'S CREEK OR BORDENTOWN FORGE

Burlington County

ABOUT 1722, the project of erecting an iron forge on a small tract of land on Black's Creek, about a half mile from Bordentown, then called "Farnsworth's Landing," or "Burden's Landing," was first proposed. Owing to misunderstandings among those interested, it was never completed, although it is asserted that the foundations had been started and much of the material for its erection was on the ground. The three original proprietors, Samuel Farnsworth, Isaac Horner, and Joseph Borden, finally conveyed the property to Thomas Potts, son-in-law of Joseph Borden. On February 1, 1725, he, in turn, conveyed to Colonel Daniel Coxe a "one undivided half" interest in the property and a one-fourth share to John Allen, reserving the other quarter part to himself. Under these three partners the forge was now completed, the actual work on the building being done by Joseph Scott who is described in his will, dated October 13, 1726, as a forge carpenter.¹ Among the items of his estate was a claim of £16 13 5 against Col. Coxe & Co.

The original raw material used in this forge was bog ore, which was found along and near Crosswicks Creek. In Scott's *Burlington County Atlas* it is stated that this ore was transported to several nearby forges or furnaces, from which it may be inferred that the Trenton Forge also obtained its ore supply from this source. There is a tradition that in later years this forge used pig iron which it got from the Durham and other furnaces up the Delaware, but so far no records have been found which would confirm this story, except an advertisement in the *New Jersey Gazette*, October 14, 1778, quoted below.

Colonel Coxe soon acquired the Allen interest, which gave him title to three-quarters of the property. The original forge was operated for only a few years. When the executors of Daniel Coxe offered his interest in the property for sale in 1739,² they stated that it was "now somewhat out of Repair." With the ironworks

¹ *New Jersey Archives*, First Series, XXIII, 410.

² *Pennsylvania Gazette*, December 20, 1739.

Black's Creek Forge

was also offered the Coxe equity in a gristmill, both of which were located on a twenty-acre tract of upland and the meadow that had been purchased for the "Iron Oar." The executors announced that the quarter interest of Thomas Potts could also be purchased.

The next owners appear to have been Joseph Peace and Andrew Reed, of Trenton, along with Francis Bowes of Christiana Bridge. In 1734, they, as "the owners of the Iron Works near Burdenstown," advertised for an Irish servant lad who had run away.³ Bowes, who lived at Christiana (or Christine) Bridge, found that he was at "too great a Distance to inspect the same," and tried to sell his share in 1743, describing "The Works new and in good Order, and the Water navigable to them for Flats and Boats."⁴ From this it is clear that under the new owners the forge had been rebuilt and operated.

Bowes was not successful in finding a purchaser for his interest, but the Peace and Reed shares, within the next few years, passed to David Davis. In 1748, the new partners jointly advertised the property for sale. Since this is the first definite information we have as to the size of these works, the advertisement is, herewith, quoted in full:

Philadelphia, Jan. 12, 1747-48.

To be Sold, on reasonable terms, A Good forge, or iron-Work having three fires, viz. two finerys, and one chafery, with hammers, anvils, bellows, running gears, & etc. in good order; and also a new grist-mill, having one pair of stones and a boulting mill, commodiously situate on Black Creek, about half a mile from Burden's Town; said Creek, is navigable for boats up to the works, and stream is good. . . . The quantity of land to said works is 20 acres, or thereabouts, lying on both sides of the Creek. . . . There is also a quantity of coals in the coal-house, and a pretty deal more engaged, which the purchaser may have at the usual price, to enable him to carry on the said works. For title and terms of sale, enquire of Andrew Reed and Joseph Yard, in Trenton; or Francis Bowes and David Davis, in Philadelphia.

Pennsylvania Gazette, January 12, 1747/48.

The records show that the interest of Francis Bowes was purchased by William Yard and that his wife, Mary Peace Yard, acquired Davis' two-thirds share. Mary Yard, "late Mary Peace," having died soon after the purchase and before the title had been transferred, Davis failed to execute a deed to her administrator.

³ *Pennsylvania Gazette*, September 8, 1743.

⁴ *Pennsylvania Gazette*, December 1, 1743.

New Jersey Forges and Furnaces

Davis also having died early in 1748, it became necessary for the administrator of the Mary Yard estate to enter suit to compel his administrator to carry out the contract or return the purchase money. As there were other creditors he was unable to do this, and the Black Creek Forge was then taken by the sheriff and offered for sale on July 25, 1748.⁵ It was announced in the advertisement of this sale that the other third part of the works and "a parcel of coal wood already set in pits to make coal" could be purchased from William Yard on reasonable terms and on time for payment of the money. Soon after this the forge was abandoned. A later notice mentions a small tract of land "within about half a mile of Bordentown and formerly known by the name of Black Creek Forge."⁶

The water power was now used to drive a gristmill and sawmill at one time owned by Robert Lewis of Philadelphia. The former was destroyed by the British on their march through New Jersey, after the evacuation of Philadelphia in June, 1778. In offering this property for sale it was stated that "An ironwork was formerly erected at this place, which was supplied with pig-iron from Durham, and other furnaces up the Delaware."⁷

⁵ *Pennsylvania Gazette*, June 23, 1748.

⁶ *Pennsylvania Chronicle*, February 22-29, 1768.

⁷ *New Jersey Gazette*, October 14, 1778.

BLOOMINGDALE BLOOMERY OR FURNACE

Bergen County

now

Passaic County

BLOOMINGDALE BLOOMERY or Furnace was located on the Pequannock River, three miles above Bloomingdale, and according to Dr. Mercer, was erected by John and Uzal Ogden in 1765. It is first mentioned in connection with the surveyor's report on a "Road that leads from Bloomingdal Furnace to Charlotteburgh," dated April 15, 1767.¹ The Ogdens were interested in the Vesuvius Furnace at Newark, where they also conducted a general store. Their investments in mining properties were so extensive and the returns so uncertain that they were compelled to mortgage some of their iron lands to Thomas and Ferdinand Pennington of Bristol, England. In 1770, Uzal Ogden published a notice admitting his insolvency, and some months later both he and John Ogden made an assignment of their estates to Joseph Riggs, Jr., and Thomas Longworth. The assignees then sold "the Furnace, Casting-houses, Coal-houses, and other Appurtenances;" and also "several Tracts or Parcels of Land, situate, lying and being in the Counties of Morris and Bergen, at and near Bloomendale."

While the original works are said to have been in existence up to about 1830, we have been unable to learn anything of its operations or owners after the beginning of the Revolution.

After entirely disappearing, the Bloomingdale works were rebuilt as a two-fire forge in 1847. There were three forges operated at Bloomingdale in 1850, one by T. & G. Smith, which, according to Bishop, is on the site of the original forge, another by Henry Vreeland, and the third, by M. T. Ryerson. Of these nothing further is known, and they probably confined their efforts to making iron billets.

¹ William Nelson, *Passaic County Roads*, p. 17.

OLD BOONTON WORKS

Morris County

THE land on which the ironworks at Boonton stood was purchased, in 1770, by the Ogdens and Nicholas Hoffman, and the mills built shortly thereafter. Tradition says the six acres of land were bought for a pound of tea, but this probably arose from the fact that the purchasers later became loyalists.

According to E. D. Halsey

A slitting mill was erected at Old Boonton on the Rockaway River, about a mile below the present town of Boonton, in defiance of the law,¹ by Samuel Ogden of Newark, with the aid of his father. The entrance was from the hillside, and in the upper room first entered, there were stones for grinding grain, the slitting mill being below and out of sight. It is said that Governor William Franklin visited the place suddenly, having heard the rumor of its existence, but was so hospitably entertained by Mr. Ogden, and the iron works so effectually concealed, that the Governor came away, saying he was glad it was a groundless report, as he had always supposed.²

Prior to the erection of the Ogden works at Boonton, a forge had been built there which was in operation before 1759, when David Ogden obtained title to the tract. There is, however, no authentic information regarding this earlier plant. The place was then known as the Old Forge, later changed to Boonetown, after Thomas Boone, an early colonial governor. It was this land which Samuel Ogden obtained from his father David, and on which the extensive ironworks above noted were erected. Samuel Ogden, prominently connected with the plant, advertised in 1772 for a negro who had run away.

The only account which has been found of the kind of products made at the old Boonton Mill is in an advertisement which appeared in the *New York Gazette and The Weekly Mercury*, December 28, 1772, as follows:

¹ Prohibiting the "Erection of any Mill or other Engine, for slitting or rolling of Iron" etc., promulgated in 1750.

² *New Jersey Archives*, First Series, XII, 674.

Old Boonton Works

SAMUEL OGDEN

MANUFACTURES in the best manner, at his works in Booneton; bar iron for rudders, grist-mills, and saw-mills; share moulds, large and small, square and flat iron of all sizes; and also cart, waggon and chair tire. Which he will deliver at New York on the most reasonable terms, drawn agreeable to any given directions, immediately after application made therefore, to him at said works, or to Mr. Nicholas Hoffman merchant, in New-York.

Three years later he advertised for "some person who understands the nailing business."

While it was well known that David and Isaac Ogden and the former's son-in-law, Nicholas Hoffman, were Loyalists, it was not until 1778 that any definite action was taken to confiscate their property. The subject came before the Committee of Safety in the following resolution of August 21, 1778:

Whereas there is great reason to think that the Slitting Mill at Boonton, carried on by Samuel Ogden, Esqr is the property of the said Samuel Ogden & of several other persons, which other persons are disaffected to the present Government, and now with the enemy, and whose personal estate is now forfeited by the law of the State; and whereas all the Shares of the profits that have been made by the said Slitting Mill, belong to such disaffected persons are in consequence of the said law forfeited to the State, & there is reason to believe that the said disaffected proprietors have by fraudulent & collusive conveyances transferred their shares in the said Slitting Mill in secret trust for their own uses, in order to evade the law & secure their interest therein, & in the profits thereby made, notwithstanding such forfeitures, by means whereof the State is like to be defrauded out of a very considerable sum of money— Therefore, Ordered, That the Attorney-General be directed to file a Bill in Equity against the said Samuel Ogden, for the discovery of all the owners of the said Slitting-Mill, and of the neat profits thereby made since the fourth day of June 1777.³

It was discovered that Nicholas Hoffman and Isaac Ogden had "near" one-third interest in the Boonton mill sold by the Commissioners of Forfeited Estates of Morris County, April 5, 1780, and acquired by Samuel Ogden. While Samuel Ogden purchased the Hoffman and Isaac Ogden interests in 1780, he did not get a deed for the property until May 1, 1784. From these deeds (for there were two, one for each interest) we learn that Nicholas

³ *Minutes of Council of Safety, 1777-78*, p. 274.

New Jersey Forges and Furnaces

Hoffman and Isaac Ogden joined "the army of the King of Great Britain on January 1, 1777," and that Abraham Kitchel, as agent for Morris County, transferred the property to Samuel Ogden, for a consideration of £30 proclamation money for each share.

Samuel Ogden in 1783 moved to New York, where he conducted a general iron merchandizing business, advertising for sale

Bar iron of all sizes, rod iron of all sizes, Swedes, Waggon Cart and Sleigh tire neatly drawn and warranted as to quality—Andover Iron of different sizes—Booneton and other Refined Iron—Bloomery Bar Iron, Spikes, Rod Iron and Batsto Pig Iron.

A few years later John Jacob Faesch became lessee of the Boon-ton tract, which contained 2500 acres of land, a forge of four fires, a slitting mill and a gristmill. Under the terms of the lease, which was for twenty-one years, Faesch was to pay a rental of £50 New York currency and was to have the privilege of buying wood for the forge at nine pence per cord. Cazenove, an eminent Frenchman who came to America as the representative of several large Dutch banking firms, visited the works in 1794, and describes them as follows:

At Boun Town [Boonton] $2\frac{1}{2}$ [miles] at the works of Mr. J. S. Faesch. He came from Basle in 1770. He keeps these iron-works with Mr. Ogden from Newark; the pig iron is made 10 miles further up, at Mount Hope, where the mines are. The miners are paid so that a hard-working miner can earn 10s., $1\frac{1}{4}$ dollars, a day. The forge for making iron bars is double; a fire and 2 hammers. Bellows of new construction, kinds of iron boilers whose lids are pushed by pistons up to the further end, and from there the air passes through tin pipes into an iron pipe which conducts the air into the fire. In another workshop the bars are made red hot and pass through a roller that flattens them and from there they pass through another roller where the plates are cut into rods suitable to make nails. They sell these iron rods for £42, or 105 dollars, for a barrel of 2000 pounds. Mr. Faesch lives there in a very rustic and stony place, in order to take advantage of a stream at the bottom of the valley. A half mile away [is] a church where they preach in Dutch every two weeks.⁴

After the death of John J. Faesch the works were advertised for rent and were described as consisting of a forge with four fires, a slitting and rolling mill.⁵ This notice was signed by David Ford of Morristown, Richard B. Faesch of "Booneton" and John J.

⁴ *Cazenove Journal*, pp. 6-7.

⁵ *Trenton Federalist*, June 17, 1799.

Old Boonton Works

Faesch of Mount Hope, who were the executors under the will of John J. Faesch. In 1805, Samuel Ogden sold the equity in the Boonton Works to Richard B.⁶ and John J. Faesch, sons of John Jacob Faesch, Sr. They carried on the works until the death of John Jacob Faesch in 1809, when his heirs joined with R. B. Faesch in continuing its operation. In the spring of 1820, a freshet carried away the dam, and shortly afterwards Richard B. Faesch became insolvent. All of the real estate, including the forge, was sold to Israel Crane and William Scott who made extensive improvements to the property, including a new raceway and equipment. Owing to the losses and expenses the partners became dissatisfied and divided up the property, the forge and adjacent lands going to Crane who soon sold to John Righter. The works now remained idle for a while and were finally allowed to go into decay.

In 1829, the New Jersey Iron Company began the erection of a new mill, which was completed in 1830, at a cost of \$283,000. Owing to a lack of skilled workmen in this country, the company brought from England a number of rolling-mill mechanics, and many of the special machines used in the plant were also imported from England. Notwithstanding the most modern equipment, the company was not successful.

The seat of these works was called "Boonetown Falls," to distinguish it from old "Boonetown." About 1851, they were acquired at a sheriff's sale by Dudley B. Fuller, of New York City. Fuller was a commission merchant and the largest creditor of the company. He soon associated with himself James C. Lord, under the firm name of Fuller & Lord. The firm name remained until 1876, although both partners had died in the meantime.

The axles of the first passenger coaches on the old Camden and Amboy Railroad were made at Boonton. These works were selected because of the superior excellence of the product, which was considered equal to any made in Europe.

⁶ Richard B. Faesch is shown as the proprietor in a petition addressed to Congress in 1816 by the owners of ironworks in Morris County.

BROOKLYN FORGE OR WORKS
OR
HINCHMAN'S FORGE

Morris County

BROOKLYN FORGE was located at the head of the Musconetcong Creek, at "the uppermost falls near" the mouth of Lake Hopatcong. On June 5, 1764, Benjamin and Thomas Coe deeded "one-half of a certain forge with one fire" and one-half of all their forge lands, water rights, etc., on the Musconetcong Creek to Garret Rapalje, an importer of iron in New York. They excepted in this conveyance that sawmill which stood on the same dam. From this it is evident that there was a forge there at that time. George Reading, in 1766, offered several parcels of land for sale, one of which, at the "Head of Little Pond," was about six miles from "a new Iron-Works, erecting by Garret Raplejes of New York." In January, 1768, Rapalje leased the works to Joseph and John Tuttle for five years at an annual rental of £300, reserving the right to build a furnace at one end of the dam. The Tutties were to deliver all of the iron they made to the lessor in New York at the market prices. These were fixed at first at £28 per ton for refined iron and £24 per ton for "Whippany or bloomed iron." The Tutties, however, were not able to operate the plant successfully and eventually made an assignment.

According to an advertisement which appeared in the *Pennsylvania Packet*, June 17, 1778, over the signature of Garret Rapalje, the plant was described as situated "at the head of Musconetcong river, in New Jersey, about thirty-five miles from Elizabeth Town and four from Suckasunney Plains." It consisted of a forge with four fires and two hammers, besides a gristmill and sawmill. Attached to the forge was a tract of land containing about three thousand acres. At the time the works were under lease for a rental of eight and one-half tons of bar iron per annum. The next year it was again offered for sale and described as "situated at the head of Muskenikunck river, with a large pond of six miles long and two wide, where all the coal can be transported by water to the coal-

Brooklyn Forge

house door." It is stated that the works are twelve miles from Morristown, and are called "Brookland Works." Garret Rapalje, the owner, was residing at the time at Squire's Point in Sussex County.

Moses Yamans, about 1780, began operating the works and soon formed a partnership with Samuel Williams of the Greenwich Forge, and Christian and William Butts of Berks County, Pennsylvania. This continued until June 4, 1782, when the partnership was dissolved, Christian Butts at Mount Pleasant Forge, Berks County, Pennsylvania, and Moses Yamans at Brooklyn Forge settling up the firm's affairs.

Rapalje eventually mortgaged the forge to a London merchant, and on foreclosure of this mortgage it was sold in 1809 to Thomas Cadwallader of Philadelphia. About 1800, Phineas Fitz Randolph of Morris County leased the works and operated three of the forge fires until it was sold by Cadwallader on September 25, 1811, to James and John R. Hinchman for \$1000. It was known as Brooklyn Forge, (named on the tax assessor's list for 1810, Brooklyn Forge), or Hinchman's Forge, until 1816, when the Hinchmans ceased its operation. Rapalje is supposed to have given the works the name of Brooklyn after the place of his birth, Brooklyn, New York. Before coming to New Jersey he was engaged in the mercantile business in New York, his store being located opposite the Fly Market at the foot of Maiden Lane.

The forge was now idle for two years, and then Charles Randolph revived it. Not long afterwards William Zeek, owner of a large farm in the neighborhood, began operating two fires and carried on the business until his death in 1828. The Morris Canal Company next acquired the property and dismantled the works.

The loyalty of Garret Rapalje was in question on several occasions during the Revolution. In 1777, he and his brother George were brought before the Council of Safety, the former taking the Oath of Allegiance, but the latter refusing, he was adjudged a loyalist and committed to jail in custody of the sheriff of Gloucester County. In August, 1778¹ Garret Rapalje was again suspected of disloyalty and was confined for a time in the Morristown Jail, but was later released upon giving bonds to appear at the next term of the Sussex County Court. It may also be noted that at that time he was interested in a salt works on the coast between Squaw and Toms River. The following year he advertised the sale of a forge on the Musconetcong (see above), from which we must infer that he was able to convince the court of his innocence.

¹ *Minutes of Council of Safety of New Jersey, 1777-78*, pp. 50-51, 273.

BUDD'S IRON WORKS OR CUMBERLAND FURNACE

Cumberland County

ELI BUDD of Burlington County in 1785 purchased a large tract of land on the Manumuskin Creek in Cumberland County and shortly afterwards built a forge for the manufacture of iron on the creek, about five miles above Port Elizabeth. About 1810, his son Wesley, with several associates from Philadelphia, erected a blast furnace on the creek at the point where the "Old Cape Road" crossed the Manumuskin on its way to Millville. In the *Martha Furnace Diary* it is mentioned several times during the year 1812 as "Budd's new Furnace at M. River." About 1812, Budd sold the works to Benjamin Jones. The place was now called Cumberland Furnace and later Manumuskin Manor. About 1818, the new owner failed and the property was purchased by Mark Richards and William Howell, who, however, soon sold to Isaac Townsend. In 1820, Townsend conveyed one half to Richard Wood and George Bacon and the following year sold the other half to Hollinshead & Platt, who soon bought the Wood and Bacon moiety. In 1821, they sold the entire property to Edward Smith, of Philadelphia, who greatly improved the ironworks and continued it in operation until about 1840, when the "coal on about 15000 acres of land connected with the establishment, being entirely consumed, the business was abandoned and the works went to decay." The only trace of this old furnace still to be seen is a part of the stack foundation which was recently uncovered in building the new road from Millville to Port Elizabeth. Upon the death of Edward Smith the property passed to his son Thomas and a daughter, who was the wife of Dr. J. T. Sharp. The latter bought out the share of Thomas and then sold the property to R. D. Wood.¹

When the nearby ore in Downe township became exhausted the raw material had to be brought from Delaware and from Burlington County. All of this ore and all of the iron manufactured were

¹ L. C. Q. Elmer, *History of Cumberland County*; T. Cushing & C. E. Shepperd, *History of Gloucester, Salem and Cumberland Counties*; and the *Clement Papers* in the Historical Society of Pennsylvania.



CUMBERLAND FURNACE PLATE

Budd's Iron Works

carried in ships up the Menanticō Creek to "Schooner Landing," whence they were carted to or from the furnace.

According to a survey of the Smith land, made in 1831, there were two forges connected with these works, one directly across the dam from the furnace and the other about a mile up stream, a dam having been built just below the point where the Big Canute branch joined the Manumuskin Creek.²

Doctor Mercer in *The Bible in Iron* says that stove plates were cast at Cumberland Furnace about 1812. These castings were sent to Troy, New York, to be mounted. The writer has a side plate of a six-plate or five-plate stove which was found about twenty years ago in a blacksmith's shop in Mount Holly. The plate has the words CUMBERLAND FURNACE across the top and a well-executed design consisting of two oval medallions underneath.

² The map of this Survey is owned by the author.

BURNT MEADOW FORGE
OR
JOHN HARRIMAN'S IRON WORKS
OR
DENMARK FORGE

Morris County

BURNT MEADOW FORGE was on the headwaters of the east branch (also called Burnt Meadow Brook) of the Rockaway River, at Denmark, and nine miles north of the town of Rockaway. It was built in 1750 by Colonel Jacob Ford, Sr. In deeds for certain lands taken up by Colonel Ford in 1757, they are described as "on both sides of the road leading from David Beman's iron works to the Burnt Meadow forge." The forge was owned by John Harriman in 1764, at which time it was called "John Harriman's Iron Works" and it later came into possession of Harriman & Sayre.

The next owner appears to have been Colonel Jacob Ford, Jr., who died of pneumonia on January 11, 1777, during the encampment of the Continental Troops at Morristown. The Colonel was very proud of his achievements at Denmark Forge and, according to Dr. Tuttle, once boasted "that in his forge at Denmark he had made and shingled a loop that weighed twenty-eight pounds." There were several transfers of the property after Colonel Ford's death, but it usually came back to a Ford. In 1801, David Ford advertised a valuable site for a forge at Burnt Meadow together with two to three thousand acres of woodland adjoining. From this notice we learn that the old Burnt Meadow Forge had been abandoned for some time, but that part of the old forge dam was still standing and could be repaired at small expense.

Soon after this time Benjamin Holloway became the owner and, in 1806, entirely rebuilt the forge dam and buildings. In 1818 Holloway failed, and the works were bought by George Stickle. He sold it in 1821 to John Hardy, who transferred the property to John M. Eddy twenty years later. The next owner was Edward R. Biddle, the owner of Mount Hope. It finally came into the possession of Ernest Fielder, of New York, but was soon abandoned.

BUTCHER'S FORGE OR WORKS

Monmouth County

now

Ocean County

BUTCHER'S FORGE, shown on some of the early maps as Butcher's Works, was located on the south bank of the Metedeconk River just east of the bridge on the old road from Squan Village to Toms River. John Lippincott of Mount Holly and later of Howell township, Monmouth County, had bought a tract of land from the Proprietors described as lying on the "South side of Metedeconk near Indian Stage and near the road from the new bridge over the Metedeconk to Cedar Bridge," on which, about 1808, he built a forge. He must have soon relinquished ownership of the forge, since in 1810 Banajah Butcher and Barzillia Burr were given permission by the Legislature to erect a dam across the "Metedeconk River in the township of Howell and Dover, in the county of Monmouth, at or near a place called Indian Stage where the present dam is, for the purpose of working and carrying on the forge and grist-mill now erected."¹

The product of these works was almost entirely water pipe, for which a ready market was found in New York City. It is said that the majority of the early water mains in lower Manhattan came from Butcher's Forge. In the earlier days, the product was sent to New York by ships which entered Barnegat Bay through Cranbury Inlet. After this inlet closed, about 1812, the pipes were carted to the Shrewsbury River, and then shipped by boats. When the bog ore in the vicinity had been exhausted, ore was brought from the Fishkill region on the Hudson River.

After the works had been sold to Barzillia Burr of Howell township, Monmouth County, and Banajah Butcher, it became locally known as Butcher's Forge and the village as Burrsville, (now Laurelton). So far as can be learned the works continued in operation until the 1840's.

¹ *Session Laws of New Jersey*, November 3, 1810.

CHANGEWATER OR ROBESON'S FORGE

Sussex County

now

Warren County

A FORGE was located on the Musconetcong Creek, about seventeen miles from its mouth, at a place which was later called Changewater, Warren County.¹ It was erected by Jonathan Robeson, soon after the building of Oxford Furnace, with which it was closely affiliated and from which it was only five miles distant. In the advertisement of a large tract of land which appeared in the *Pennsylvania Gazette*, January 8, 1750-51, Isaac Greenleaf describes the property as "joining Jonathan Robinson's forge on the Muskonekong river."

When in 1756, Robeson offered his properties for sale, he described the Changewater Forge as follows:

. . . also the two-thirds part of the change water forge, with about fourteen hundred acres of land, very well timbered; the forge stands on Muskoneckonk creek, a large and constant stream, not subject to frost or drouth (the works are allowed by forge men, who have been much amongst iron-works, to be the best they have seen) with a saw mill and several other Buildings to accommodate the workmen . . . ; the forge is about 5 miles from the Furnace,² and in the way to market, either Philadelphia or New York, the distance and price of carriage of the iron about the same. Any person or persons that may incline to purchase the premises, or any part thereof, may, by applying to the subscriber, at Kingswood aforesaid, be informed of the terms of sale . . .

Jonathan Robeson.

Pennsylvania Gazette, Jan. 29, 1756

As early as 1767, Jacob Starn was connected with Changewater Forge, and on several occasions requested the capture of servants who had run away. That he was a prominent individual in old

¹ *New Jersey Geological Survey*, 1910, p. 7, lists Changewater under "Charcoal Blast Furnaces formerly operated in New Jersey." There is, however, no existing record to show that there ever was a blast furnace at this place.

² Oxford Furnace offered for sale at the same time.

Changewater Forge

Sussex County is evident from the fact that he was named by the Provincial Legislature, in 1765, as one of the persons to whom the Treasurer of the Province was directed to pay over a sum, not exceeding £200, to be disposed of "to the best advantage in purchasing bread-corn for the inhabitants of said county." At that time the people were in dire distress for want of "bread-corn," probably due, as Benjamin Edsall says, to the large influx of settlers into the county exhausting all the surplus grain. He also served as sheriff and as justice and then, by appointment of the Crown, as a judge of the Sussex County court. In his will, which is dated November 27, 1773, he is described as "iron master." It was provided that "if the forge does not sell to advantage, it is to be rented out and to leave One Hundred and fifty acres of Land and some meadow with all the forge Buildings."

Mark Thompson (or Thomson, as shown on his tombstone) operated this forge for a number of years and, beginning in 1784, frequent mention is made in the Durham Furnace papers of "stampt metal," "stampt stuff," and "stampt cinder iron" being delivered to Mark Thompson at Changewater.³

Snell⁴ quotes an interesting letter dated at Changewater, April 20, 1787, as follows:

Dear Sir—I shall not have it in my power to send you any money before the 12th of May; if it will not then suit you to receive it for the Pig Metal, I must send you the Bar Iron, agreeable to contract. I expect by the above date to be able to pay for the remaining 10½ tons of Pig, unless sadly disappointed, and should it not suit you to receive the money then, it will be no inconvenience to me. I can assure you that paper money is now scarcer than hard was before our Loan Money was issued. My Bellows will not want Dressing until October next. I will thank you to request Mr. Miller to come over then to Dress them. I am your very Humble Servant.

MARK THOMSON

Please send one Ton Piggs by the bearer, John Swartzs

"M. T."

Mark Thompson (Thomson) continued to operate the Changewater Forge until his death on December 4, 1803, and in the in-

³ According to Dr. B. F. Fackenthal, Jr., who has made an extensive study of contents of some of these old cinder banks, the metallic iron ran from 43.67% at Ringwood to 48.51% at Split Rock and from .3 to .89% of phosphorous.

⁴ J. P. Snell, *History of Sussex and Warren Counties*, p. 713.

New Jersey Forges and Furnaces

ventory of his estate mention is made of large quantities of bar-iron on storage in New York together with a smaller amount at the forge.

He was a man of note in his day, a member of Congress from 1795 to 1799, and his daughter, Ann Breckenridge Thompson, was the wife of Dr. Samuel Fowler, who discovered and named "franklinite," an ore containing zinc and iron. Dr. Fowler's second wife was Rebecca Wood Platt Ogden, daughter of Robert Ogden, 2nd, through whom he came into possession of Sterling Hill and adjacent lands on which have been uncovered some of the most extensive zinc mines in the country.

In 1816, Changewater Forge was worked by Robert C. Thompson, son of Mark Thompson, and at that time contained two fires. These works were in operation in 1834, but it is not known how long after this time they were continued.

CHELSEA FORGE

Sussex County

now

Warren County

THE Chelsea Forge was located on the Musconetcong Creek, about a mile and a half from its mouth, at what later was called Finesville, the site now being occupied by the knife works of Taylor, Stiles Co. When the old forge was built is unknown, but it was probably between 1751 and 1753. From the records we learn that Samuel Morris, "miller of White Marsh Township, Philadelphia County, Pennsylvania," in 1751 purchased from Marcus Hulings and his wife, Rebecca, a one-third interest in a tract of land on the Musconetcong Creek, which corresponds in bounds to that on which Chelsea Forge stood. As no mention is made in the deed of any forge or iron works it is safe to assume that no such works existed on the land at the time of this purchase. Two years later, Samuel Morris inserted the following advertisement in the *Pennsylvania Gazette*, May 3, 1753:

To be sold by way of publick vendue, on the 21st of May instant; by Samuel Morris, administrator of the estate of David Morris, deceased,—One Third part of a certain Iron Forge, together with the land thereto belonging, situate upon Muskonecong creek, in West New-Jersey, near the mouth of said Creek, where it empties itself into the Delaware, between two and three miles from Durham furnace; it has extraordinary convenience for drawing bar iron, the stream being very large and constant, and the carriage from thence to Philadelphia frequently by water down the said river.

Samuel Morris.

Jonathan Thomas purchased the one-third interest of David Morris, deceased, and Samuel Morris owned a like share, but so far the identity of the owner of the other portion has not been learned. Since neither of these owners was a practical iron master it is certain that someone fully acquainted with the business must have been associated with them at its inception. However, in 1761, Samuel Morris transferred his interest of a third to Abraham Evans. Evi-

New Jersey Forges and Furnaces

dently the forge was not successful, for on January 3, 1763, Thomas and Evans jointly offered their two-thirds interests for sale—this offering not only included the forge lands, but also another tract of five hundred and eleven acres which Abraham Evans had obtained from Daniel Bray in 1760. It was described as about a mile from the Delaware River on the "River Misconetkonk" and fifty miles from the city of Philadelphia. The property contained 552 acres of land, most of which was woodland.

From a notice which Evans inserted in the *Pennsylvania Gazette* four months after the above advertisement, it is assumed that he bought the Thomas interest. The information given in this notice is particularly interesting and it is quoted in full:

Philadelphia, May 5, 1763.

To be sold by public Vendue, at the London Coffee-House, on the 14th Inst. at 4 o'Clock in the Afternoon, two Thirds of 52 acres of Land, and the Improvement thereon; containing a Forge, with three Fire-places and Bellows, in good Repair, a good Stone House, two Stories High, with two Rooms on each Floor; likewise a good Saw-mill, almost new; with a Log Dwelling-house, Coal-house, and Stables; situated in West-Jersey, about a Mile from the River Delaware, on a fine Stream of Water, that never fails, and convenient for Pig-Iron, being within 4 Miles of Durham Furnace. There will likewise be sold, at the same Time and Place, 500 Acres of Land, adjoining the above, bounded by the River Delaware, chiefly Woodland, well timbered, and very good Land for Wheat, or other Grain. The Title good. Terms of Payment will be made known at the Place of Sale, by

ABRAM EVANS.

It is not known when Thomas Potts obtained an interest in the Chelsea Forge, but according to Mrs. A. M. Holstein's *Swedish Holsteins in America*, he was an owner in 1772. If he had an interest in this forge it could only have been as the third partner. This interest was transferred to Moses Yeomans (Yaman) & Co. before September, 1775, since in a lawsuit before the Supreme Court of New Jersey in that year the latter was mentioned as the owners of an undivided one-third share.

Soon after Evans made his purchases, he became heavily involved and gave a mortgage on his equity in both tracts "as security of and for a considerable debt or sum of money due, owing and payable to George Taylor and Samuel Flower, Esquires." Several lawsuits were brought before the Supreme Court in which the names of Willing & Morris, Richard Willis and others, and Peter Townsend

Chelsea Forge

appear as the respective plaintiffs, and Thomas Potts, late sheriff of Sussex County, William Dixon, and Thomas Potts, Esq., were the respective defendants. The writer has not been able to unravel the legal tangle here involved, nor the connection of these persons with the forge. However, we do know that the above mortgagees were compelled to foreclose on the mortgage and, in a deed signed by Taylor and the heirs of Samuel Flower, who had died in the meantime, dated August 22, 1776, the two-thirds interest which they held was conveyed to Moses Yaman, Christian Butts, and William Butts, all of Cushehoppen, Berks County, Pennsylvania, as "Tenants in Common."¹

After Taylor and Flower had taken title to the property it was leased to Moses Yaman and Company who, according to an advertisement which appeared in the *Pennsylvania Gazette*, offered a reward of four dollars for the arrest of an English servant man who had run away from the "Chalsey Forge, near the mouth of Muscunnet-cong in Sussex County, West New Jersey," or "Three Pounds if brought Home."

As Taylor and Flower were lessees of the Durham Furnace at that time, the close connection between Chelsea Forge and the latter furnace which is so frequently mentioned in the *Backhouse Papers* in the Bucks County (Pa.) Historical Society is quite evident.

It was during this management that Chelsea Forge was engaged from time to time on war work. In a letter dated Easton, July 6, 1778, Robert Levers mentions two tons of iron which he bought, still being at Chelsea Forge, and as iron was being sold at £200 per ton, he asked for instructions as to whether it was to be left there or sold at the advanced price which would be a gain of £100.

In 1780, Moses Yaman offered a tract of land for sale on which was located "a forge with two fires and one hammer, called and known by the name of Chelsea Forge." At that time the forge property consisted of fifty-two acres of land on which was located a sawmill, three convenient dwelling houses, one of which was stone, two stories high, with fireplaces at each end, and in which a tavern had been kept for a number of years past; the other two of frame and squared logs, and a number of log houses for the workmen. Yaman also owned a tract of 450 acres which fronted on the Delaware River for nearly a mile, one half of which was woodland. There were three new log houses on this tract, at one of which a ferry across the river was "designed to be kept," and near by was

¹ S. S. O. *Deed Book*, AL, p. 395.

New Jersey Forges and Furnaces

a valuable shad fishery. "Hard money" being scarce and paper currency almost worthless, he agreed to take bar iron or loan certificates in payment of the tract.

George Ross of Alexandria township, Hunterdon County, now appeared on the scene. In 1781, he obtained title to a one-third interest in "the S^d fifty two Acres & half an Acre of Land Iron forge, Saw Mill & premises belonging or in any wise Appurtaining."²

Ross does not, however, appear to have actively operated the forge, but rented it to the Durham Furnace Company, from which Daniel Cahill in 1782-83 leased the works, and on April 12, 1783, sold the lease to Richard Backhouse.

In the Durham Furnace books, under date of May 14, 1783, is an entry:

Chelsea Forge Dr. to George Ross³ £90-C-C
For one year's rent.

Evidently by the terms of the lease the Durham Furnace Company was also to pay the taxes, for on their books we find, in 1783, an entry for taxes on the Chelsea Forge amounting to £5/12/9.

Following this John Stotesbury, who had married Sarah Hughes, daughter of Colonel Hugh Hughes, of New York, operated the works, possibly in connection with the Durham interests. After Stotesbury had gone to the Greenwich Forge, another son-in-law of Colonel Hugh Hughes, Thomas Anderson, took up its management and continued from 1784-1789. There is now a gap of about eighteen years in the records so far located and the inference is that the forge was abandoned about 1790-1795.

When Philip Fine deeded a small parcel of land to his son, Philip, on June 22, 1807, it was described as part of the tract known as "Chelsea Forge Lot," which had been purchased in 1796 from John Clayton Rockhill. A gristmill was afterwards built on the old site, using the water power originally built for the forge.

² S. S. O. *Deed Book*, AL, p. 396.

³ See Hibernia Furnace and Johnson's Furnace for other mention of George Ross.

COHANSIE IRON WORKS

Cumberland County

ACCORDING to an advertisement appearing in 1753, there was a forge in operation in Cumberland County before the Revolution, as noted:

TO BE SOLD

The Iron-Works at Cohansie, in Cumberland County, with 1000 acres of land, well timber'd; the forge house is 40 feet long and 30 feet wide with one fire place already built, and a good head of water. Any person inclining to purchase same, may apply to Samuel Barnes, living on the premises.

Pennsylvania Gazette, June 28, 1753.

It is quite likely that this is the same land which is referred to in a number of early deeds as the "Iron-Works Tract" and the dam, as the "Iron-Works Dam," which was located on Cedar Creek in Fairfield township. The bog ore was obtained from the nearby swamps. No mention of these works is made by Judge Elmer, one of our most accurate historians, and nothing is known as to its activities, nor how long it continued in operation. The supposition is that the bog-ore beds became depleted and that the site was then utilized for the sawmill, erected previous to 1789, which was long known as Ogden's Mill, and later as Lummis' Mill.

DOVER FORGE

Monmouth County

now

Ocean County

OF THE history of Dover Forge, which was located on Dover Forge Pond at the head waters of the middle branch of Cedar Creek, about four miles from Ferrago, or Bamber, very little is known. As this was the largest of the Ocean County forges and in the early 1830's was one of the prominent places in this region, its history deserves fuller investigation.

The original forge, according to Edwin Salter, was established about 1809 by William L. Smith, son-in-law of General Lacey of Ferrago Forge.¹ There is a tradition in the Austin family that the building of Dover Forge was started on the same day as the Ferrago Forge and that its hammer was put into operation just one hour before the one at the latter place. This would make the date of its erection 1810-1811. Between the Smith ownership and that of Joseph Austin there is a gap in the records. Mr. Benjamin F. Cramer, who was born at Ferrago in 1844, has furnished valuable information covering this period. He says that there was a tradition in his boyhood days that Joseph Austin's father, also named Joseph, was the successor of William L. Smith, and when he moved to Ohio he turned the Dover Forge over to his son. After the original forge was destroyed by fire, Joseph, 2nd, moved to Hampton and operated a plant there until shortly before 1828, when he moved back to Dover. This tradition and subsequent history is substantially confirmed in a letter from Charles W. Austin to the author in which he states:

I have learned that an old iron forge was in operation at a place called Old Hampton² by my grandfather, Joseph Austin, and he demolished it and carted it to Dover with eight mule teams, re-built it and put it in operation again. In what year this took place I do not know, but it was prior to 1830. I was born at the place called Dover on June 7, 1864, and my grand-

¹ Edwin Salter, *History of Monmouth and Ocean Counties*, p. 38.

² See Hampton Furnace.



PANS MADE AT HANOVER FURNACE



TOOLS USED AT DOVER FORGE

Dover Forge

father, Joseph Austin, was owner of the old forge at that time and was making iron there. The iron was manufactured into long bars called "pigs" and was shipped away and made up into wagon axles, cannon balls, shovels, picks and other articles. There was a saw mill connected with the works, located on the south side of the forge in which were made cedar shingles, siding frames, plaster laths, fence pickets and posts. The iron ore in my day was gotten in different parts of New Jersey; some was dug along Atsion river between Batsto and Atsion, loaded on scows and floated down stream to a landing on Mullicas river from whence it was hauled by mule teams to Dover Forge. After Joseph Austin died (about 1868), the old forge was torn out, the inside floored over and converted into a saw mill. Besides the forge there were four dwelling houses, one a log-house in which Joseph Austin lived and died, a large blacksmith shop and three barns for the mules.

The ore for this forge was originally obtained from a bog about two miles south of the works, and even to this day the place, which has been converted into a cranberry bog, is called the "Ore Bed Bog." The remains of the old blacksmith shop are still visible, but all other traces of the buildings mentioned above were wiped out by forest fire which swept over the region in 1912.

John Austin, a son of Charles Austin, Sr. and grandson of Joseph, in a recent interview stated that the forge, as he remembered it, contained two hammers, four fires, and a stamping mill to reduce the ore and cinder mass to such a size that it could be readily melted by the forge fire.

The hammers were about fourteen inches square and three feet in height with a square hole near the upper end, through which the heavy hammer beam was inserted. This beam was pivoted about midway of its length so that it could tilt or swing up or down. The power was applied at the end opposite the hammer. On the circumference of a heavy wheel directly connected with the water wheel were four lugs or teeth, one of which would engage the hammer beam, and by pulling the free end down raise the hammer to the required height and then let it drop with a mighty blow on the anvil. The speed of the hammer blows was regulated by the flow of water under the wheel.

The bellows which furnished the air blast for the forge fires consisted of two drums, six feet in diameter and six feet high, made of small pieces of maplewood about one and a half inches wide and eighteen inches long, fitted and glued together to make a perfect circle and then layer after layer built up to the required height. Each drum had a tight-fitting bottom with a leather inlet air valve,

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an air-blast outlet pipe, and a circular plunger, around the circumference of which was fastened a leather strip to make an airtight closure. The plungers were moved up and down by a vertical shaft running through the casings and attached to a tilting beam, which was operated by the water wheel in a manner similar to the hammer. An almost continuous air blast was furnished by the alternate strokes of the plungers.

Joseph Austin was looked upon as an expert forge man. It is said that he was able to control the hammer blows so accurately that he could place a large knife edgewise on the hammer block, raise the hammer to its full height, and control its downward flight so that it would stop at the point when the hammer just touched the cutting edge of the knife but did not turn or dull it. While this tradition may be somewhat exaggerated, it illustrates the skill of these early artisans with the crude mechanical appliances of that day.

Recently a number of tools and tongs used in these works during the Civil War were uncovered in the débris of the fire. On the banks of the tailrace was found a pair of bellows "tubs" which tradition says were brought from Hampton. They are similar to the bellows which were in use in the forges in this section. The principal product of Dover Forge was always bar iron, which was hauled to Philadelphia over a road through the woods long known as the "Mule Road." This road, of which no trace exists today, was laid out in a straight line to Buddtown and crossed numerous swamps en route over log causeways.

About 1868, this plant was converted into a sawmill and later into a barrel factory. The mill is now idle and a part of the property is used as a cranberry bog.

ETNA FURNACE AND FORGE

Gloucester County

now

Atlantic County

MUCH uncertainty exists, and many diverse statements have been made as to the origin of Etna Furnace, which was located on the north side of Tuckahoe River about four miles west of the village of Tuckahoe, formerly called Tuckahoe Bridge. The chief claim to its inclusion in this narrative is the fact that a part of the works is still in a fair state of preservation and affords an opportunity to study the type of furnace stack used in extracting iron from the bog ores.

After extensive searches the writer is able definitely to fix the time of its building and the names of those who financed the project. On August 26, 1815, John McCormick conveyed to John Reynell Coates of Philadelphia one hundred acres of land on Tuckahoe River on which a furnace was soon to be built.¹ One half of the money for this purchase was furnished by Coates, while Joshua Ladd Howell and John Ladd Howell supplied the balance. In a deed dated January 11, 1817, John R. Coates conveyed one moiety or half part of this tract to the two Howells as "tenants in common," the conveyance stating "on which Tract of land they the said parties at their Joint Expence have erected and built a furnace Iron works, wharf and other Improvements."² This definitely fixes the time of the founding Etna Furnace as between the dates of these two deeds, 1815 and 1817. The forge connected with the works is mentioned in a deed dated December 27, 1816, in which Joshua Ladd Howell and John R. Coates convey to Joshua L. Brick of Cumberland County a one-twelfth interest in 2500 acres, of land adjoining the above tract and also "a one twelfth interest in the forge and forge seat thereon."³ This forge was located about two miles from the furnace, and the pond from which the water

¹ *Gloucester County Deeds*, Book W, p. 583.

² *Ibid.*, Book DD, p. 342.

³ *Ibid.*, Book Z, p. 420.

New Jersey Forges and Furnaces

power was taken to operate the hammer and bellows is still known as the "Forge Pond."

The Howells and Coates had by 1816 accumulated large land holdings in Weymouth township, Atlantic County, and adjacent parts of Cumberland County, including parcels belonging to the Sculls, Steelmans, and Benezets, and on February 1, 1816, Joshua Ladd Howell sold to Benjamin Betterton Howell of Philadelphia one half of his interest in over 9,600 acres of land abutting on Tuckahoe River, the other interests being held at that time by John R. Coates and John Ladd Howell.⁴ The arrangement under which the furnace and forge were operated is not known, and the earliest mention of the Etna Company is in 1821, by which time Thomas Lee and Isaac Townsend held equities in the Etna Tract.⁵

John Reynell Coates, who was the land agent for the Penn family, was looked upon as the best posted authority on the land laws of the several provinces. It was no doubt in connection with this position that he became interested in lands in New Jersey, the Penns owning large tracts adjoining these on Tuckahoe River. Soon after the establishment of Etna Furnace, Coates made a visit to Europe to study the methods of iron and steel manufacture, but if he returned with any definite improvements they were not put into use at Etna where, so far as known, no steel was made.

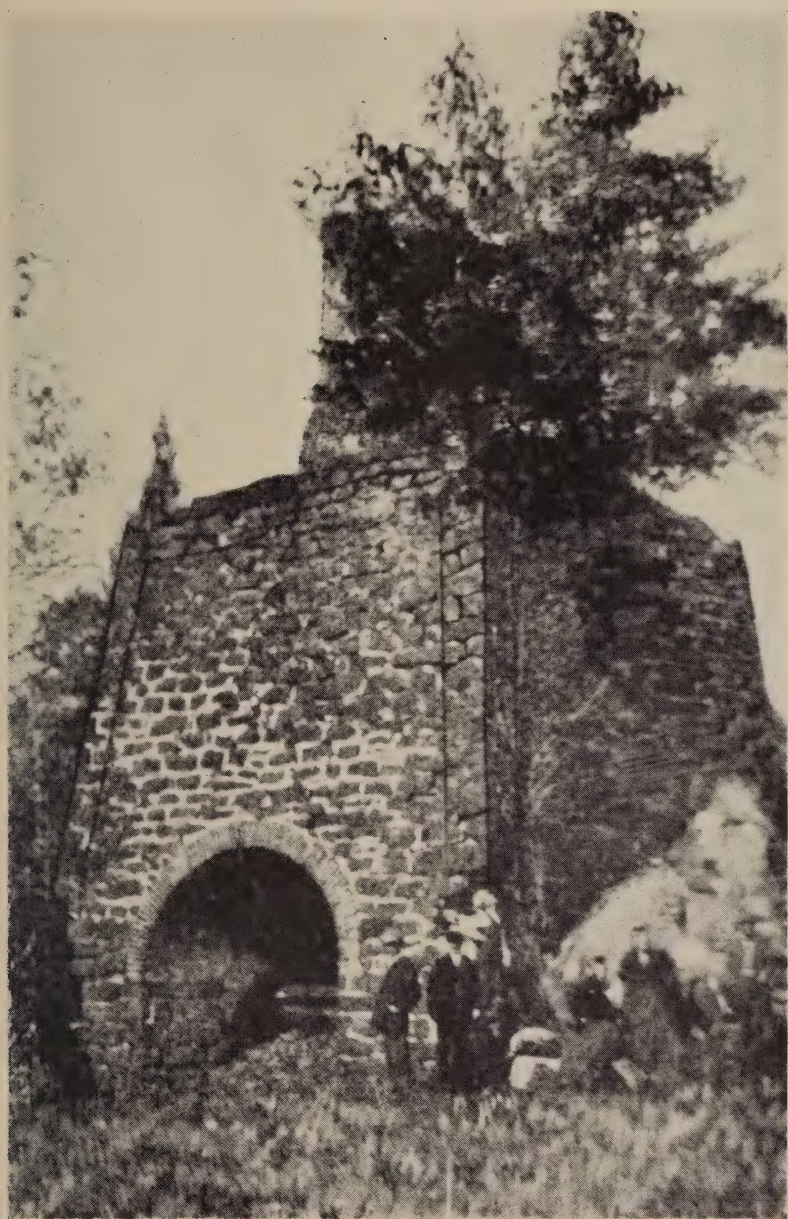
The first manager of the works of whom we have any definite knowledge was John Ladd Howell, 2nd, and in the *Howell Papers*, now in possession of Frank H. Stewart, President of the Gloucester County (N. J.) Historical Society, frequent mention is made of "Etna Furnace near Tuckahoe," and of its activities. When John Ladd Howell, 2nd, went to Coshocton, Sullivan County, New York, the operation was continued by Henry W. and Lewis Howell, sons of Benjamin B. Howell. While the furnace is mentioned in transfers as late as 1835, when a one-quarter interest was conveyed to Peter S. Hartshorn through General Thomas Cadwalader as agent for John R. Coates,⁶ it is believed that actual workings had been abandoned before this time, probably by 1832. To this day, however, the great Etna Furnace Tract plays an important part in land transfers in this vicinity.

Benjamin Betterton Howell was a nephew of Colonel Joshua Ladd Howell, of "Fancy Hill" in Gloucester County, and during his childhood lived with his uncle, but on attaining his majority

⁴ *Ibid.*, Book Y, p. 348.

⁵ *Ibid.*, Book HH, p. 400.

⁶ *Ibid.*, Book PP, p. 290.



RUINS OF ETNA FURNACE

Etna Furnace

went to Philadelphia, where he became a prominent merchant. While not a practical iron manufacturer he was thoroughly familiar with the commercial side of the industry through his connection with Monmouth Furnace, afterwards Howell works, and, on the abandonment of Etna Furnace, with the activities of the Lower Forge and Federal Furnace near Lakehurst.

John Ladd Howell, 2nd, was a son of Colonel Howell, and while his father was allied with the party which advocated a settlement of our difficulties with Great Britain in 1812 upon honorable terms, and the repeal of the act of Congress declaring war, he became a sergeant in the Washington Guard of Philadelphia. At the time of his death, which occurred in 1828, he was engaged to be married to Eliza Kirkbride of Philadelphia, afterwards the wife of James Gurney, the famous English traveling minister.

Besides a sawmill and a gristmill there were around the furnace in its active days forty or fifty workmen's homes and a fine manor house for the manager. Just above the furnace property was another settlement, still called "Head of the River," which also furnished a number of workers who were engaged in digging ore and burning charcoal. There were during its most active period about two hundred men employed in various capacities about the furnace and plantation. In the early days all mail for the inhabitants at Etna Furnace was sent to Tuckahoe, but in 1827 the postal authorities invited proposals for carrying the mails once a week on a route starting at Woodbury and passing through Millville, Cumberland Furnace, and Etna Furnace.

The site of Etna Furnace being only a few feet above the tide water of Tuckahoe River, and no authority to construct a dam across the river having been found in the legislative minutes, the exact source of the water power to operate the bellows and other works has been unknown until recently. Not long ago an old partition deed was found in which George H. Abbott was awarded the furnace proper and the water rights and privilege of taking sand and earth from the lands along the river in Cumberland County "between the dam and the Cripple," while Joshua L. Brick was awarded the balance of the land and the privilege of making a dam across the main Tuckahoe river "between the present great or main dam and the furnace."⁷ The main dam was undoubtedly located just below the "Head of the River" and the water wheels at the furnace were fed by means of a raceway which can still be traced for a considerable part of its course. This settles the question

⁷ *Atlantic County Deeds*, Book D, p. 114.

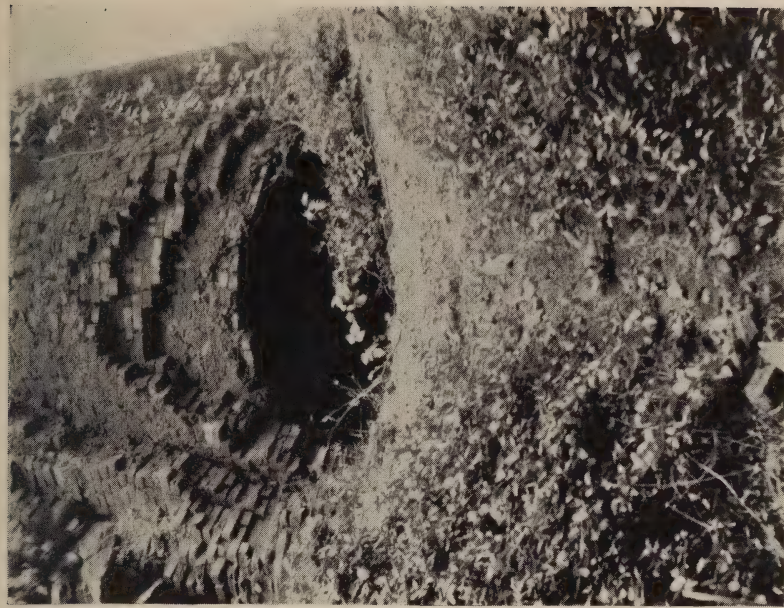
New Jersey Forges and Furnaces

of the source of power for the works. The dam was allowed to be built without the customary authority, no doubt, because it was at the head waters of the river and above navigation and did not interfere with any water rights down the stream.

A recent inspection of the ruins show that the inside section of the furnace was composed of five distinct concentric brick walls. In the inner wall the bricks were all laid as "headers," that is, the ends of the bricks formed the circle, while in the next wall the bricks were laid lengthwise in a circle following in contour the first wall, and this order was repeated for the remaining walls. The red clay bricks, which perhaps were made on the premises, measure eight inches in length, four inches in width and two inches in thickness. The total thickness of the five walls, including the bonding cement or clay, measures thirty-two inches. Around this conical brick stack a square masonry wall was built which measures at the base twenty-seven feet on each side, and tapers to twenty-two feet at the top. The original height of the furnace was twenty-eight feet. The interior of the core at its widest part measures eight feet six inches in diameter and at the top three feet three inches in diameter. To fill the furnace stack the ore, charcoal, and flux had to be wheeled up an incline or ramp to the opening at the top, but no trace of this is now visible.

Of the products of Etna Furnace little is known, but they were, no doubt, similar to those of Weymouth, Atsion, and Martha, with which there was considerable intercourse.

Mr. A. W. Shaw of Tuckahoe states that his grandfather, Nathan Shaw, a blacksmith, made many trips in the 1820's to Etna Forge for bar iron, from which he made spikes and bolts for the vessels being built at Tuckahoe. These spikes were from six inches to two feet in length, to suit the various thicknesses of the ship timbers. As ship building was a considerable industry on the Tuckahoe River and on Maurice River in Cumberland County, no doubt much of the bar iron made at the Etna Forge found its way into this channel.



RUINS OF ETNA FURNACE SHOWING EXTERIOR AND VARIOUS LAYERS OF BRICK
COMPOSING THE STACK

FERRAGO FORGE OR FURNACE
OR
BAMBER FORGE

Monmouth County

now

Ocean County

FERRAGO FORGE was located on Bamber Lake, on the middle branch of Cedar Creek, about four miles below Dover and eight miles northwest of Forked River. According to the will of General John Lacey, made in 1811, it was built in partnership with his son, John R. Lacey, but the title was still vested in the father. The executors were directed to deed one-half of the property to John R. Lacey upon condition that he should pay "one-half expense in procuring said land and building forge."

Edwin Salter says, "It has been stated that Lacey expended ten thousand dollars at Ferrago in building the dam alone, and the construction of the forge and other buildings and the road to Forked River must have required a considerable outlay of money."¹ The settlement which sprang up around the forge was, at first, called Ferrago Village and later renamed Bamber. A few years ago its name was changed to Cedar Crest.

The old dam now forms part of the road leading to the former ore beds. From its length and the difficulties in construction, the statement made by Salter as to the outlay appears to be amply justified. The site of the forge was about 200 yards north of the present dam, and on the original foundations a sawmill was constructed at a later date. The present (1929) dilapidated mill is some distance west of the old one, and was erected on a new raceway because the old one had gone into decay.

The map accompanying the return of the survey for the so-called "Lacey Road," which is dated October 4, 1810, shows the "furnace" on the north side of the road and the "Forge Pond" on the south side opposite the "furnace." From this it is clear that the

¹ Edwin Salter, *History of Monmouth and Ocean Counties*, p. 38.

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original location of the road at this point followed substantially the present road on the northerly side of the mill pond.

In 1815, Thomas R. Lacey offered the works for sale, and since it gives us the earliest authentic account of this plant the advertisement is quoted in full:

To be sold at private sale, Farrago Forge, lying on Cedar Creek, in the County of Monmouth, New Jersey, about eight miles from Toms River and seven from Forked Rivers Landing, containing seven thousand acres of woodland, a forge with four fires, two hammers, stamping mill, etc., eight good dwelling houses, handsomely situated to the works, together with all necessary outbuildings. The whole was built in the years 1810 and 11. It is considered one of the best planned and built forges in New Jersey, and is now in complete order and in operation. Possession will be given immediately if required. Apply to Thomas R. Lacey, New Mills, Burlington County, December 28, 1814.

Trenton Federalist, January 9, 1815; March 6, 1815.

It will be noted that in the above advertisement the works is called a forge, and in the report of the surveyors for the road from Hanover Furnace to Forked River (1810) it is also called a forge,² while on the map accompanying this return it is marked "Ferrago Furnace."

While Thomas R. Lacey signed the above advertisement, it appears that he was acting for his mother. Subsequently, the property passed to Eliza Smith, Catherine Darlington and Jane C. Hough, daughters of John Lacey. In 1824 Eliza Smith relinquished to her sisters Catharine and Jane C. all claim to Ferrago Forge,³ her husband having renounced his life interest in 1824. In 1830, the sisters and their husbands deeded to Charles Stewart their respective interests in the Ferrago Iron Works and the land belonging thereto.⁴ The history of the works for the next ten years has been gleaned largely from Mr. Benjamin F. Cramer, whose grandfather, Joseph Yarnall, was made manager of the forge soon after Stewart's purchase. The works made bar iron and rolled plates during this ownership. The first plates which were made were used to cover the roof of the forge house. This was one of the earliest attempts to reduce the fire hazard quite common in the early iron works, whose frame buildings were exposed to the sparks from the forges and hammers.

² *Burlington County Roads*, Book B, pp. 277-279.

³ *Monmouth County Deeds*, Book K2, p. 434.

⁴ *Ibid.*, Book W2, p. 194; Book X2, p. 205.

Ferrago Forge

About 1843, the ownership of the works passed to Ruben Rockwell of Vermont. During this period the local bog ore became too poor to work and it was necessary to bring ore from distant points. Most of this ore now came from the Fishkill region on the Hudson River, and was brought by water to Forked River, or Toms River, and thence hauled by wagons to the forge. It was made into water pipes and pig iron and sent back to New York by the same route. In fact the vessel bringing the ore always had a cargo of finished products or of charcoal for the return trip.

In 1859, William Hurry of New York purchased from Rockwell for \$16,519 about 9,000 acres of the Ferrago Iron Works Tract and 8,941 acres from John M. Read out of the same tract, for which he paid \$10,000. This land was a part of a large tract which Clayton Newbold obtained from the East Jersey Proprietors on August 13, 1791, and also included 1,345 acres that John Lacey had surveyed October 7, 1794.⁵

The forge was abandoned about 1865. Hurry, the last owner, renamed it Bamber, after the family name of his mother. The mansion house which is still standing (1929) was built by General Lacey in 1812 and the two wings added by subsequent owners. Practically the only part of the original interior still intact is the old stairway and the main room now converted into a dining room with its large open fireplace and hand-hewn oak beams. Opposite the mansion house is a home which was built for William Hurry's son.

There is still a reminder of the founder of these works in the "Lacey Road," which originally ran from Forked River to Ferrago, or Bamber, a distance of a little over eight miles, and thence to Hanover Furnace. This was laid out in 1810, so that the finished iron products could be carried to tidewater for shipment to market and direct connections provided between Ferrago Forge, owned by General Lacey, and Hanover Furnace, in which he held an interest.

John Lacey, the "Quaker General," was born in Bucks County, Pennsylvania, on "4th of 12th month, 1752," of English Quaker descent, but on the outbreak of the Revolution enlisted in the American Army, first as a captain in Wayne's Regiment on the Canadian Frontiers and later as a Brigadier General of Pennsylvania militia. Under the orders of General Washington he was assigned to patrol the country about Philadelphia and prevent supplies reaching General Howe, who was settled in that city. Late in April, 1778, he was quartered at Crooked Billet (now Hatboro) when Howe, learning of his location, dispatched the Queen's Rang-

⁵ *Ocean County Deeds*, Book 17, pp. 30, 37, 42.

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ers and a considerable body of cavalry and light infantry under command of Lt. Col. Abercrombie to effect his capture. Reaching the American camp early on the morning of May first, the British troops appeared in his rear and on both flanks, making it necessary for General Lacey with his 400 militia to retreat across the open country where his men were exposed to the cross-fire of the enemy. It was only by exercising the coolest judgment and most determined courage that Lacey was able to prevent the capture of his entire force. He virtually cut his way through the British troops, with the loss of about thirty-five killed and wounded. He was subjected to severe and unjust criticism by many of those who were lukewarm in the cause of the Colonies for allowing himself to be surprised. The attempt to hold him responsible for the reverses at Crooked Billet signally failed, especially when he clearly proved that he had exercised every precaution to prevent a surprise, but that certain of his officers and men had been derelict on scouting duty. After a review of the evidence, the Supreme Executive Council of Pennsylvania wrote: "Your conduct is highly approved; and your men have justly acquired great reputation by their bravery."

He was later appointed one of the Commissioners of Forfeited Estates for Bucks County, Pennsylvania, a position which he resigned on being elected a member of the General Assembly. In 1779 he was chosen a member of the Executive Committee of the State, holding the office for about two years.

On January 18, 1781, General John Lacey married Anastatia Reynolds, daughter of Colonel Thomas Reynolds, of New Mills (now Pemberton), Burlington County, New Jersey, and in the fall of the same year, or the beginning of the next, moved to New Mills where he became interested in the manufacture of iron. He soon took a prominent part in the affairs of his new home, being made a justice of the peace and chosen a member of the Assembly. He died on February 17, 1814, leaving a widow and four children; Thomas R., who married Susan Newbold; Catharine, who married Dr. William Darlington of West Chester, Pennsylvania; Jane C. who became the wife of Jonathan Hough of Juliustown; and Eliza, married to William L. Smith.

FRANKLIN FURNACE

Sussex County

FRANKLIN FURNACE, located in Hardystone township ten miles northeast of Newton, on a stream issuing from Norman's Pond, occupied the site near a forge which was built about 1765 by Michael Rorick for some men from New York whose names are not known.¹ Shortly after the forge had begun operations a furnace was built. The date when the furnace was built is given by Professor Cook as 1770.²

It was erected under the direction of William A. Potts. At the outbreak of the Revolution, the proprietors of the furnace fled and their property was idle for a number of years. It was next operated by John O. Ford, who worked the plant until about 1790, when he built a small forge near Snufftown. (See Windham Forge). Doctor Tuttle says that Stephen Jackson of Dover next operated the forge and continued there until early in the nineteenth century, when he moved to Rockaway where he died in 1812.

Eventually Samuel Sharp became the owner of the furnace and in 1800 offered it for sale or rent. This notice stated that 5000 acres of land were attached to the works, together with the necessary storehouses, coal houses, and casting houses, as well as a number of dwelling houses for the workmen. The advertisement further stated:

The land is well timbered, and situated to cart from two to three loads of coal per day. The ore is within 150 yards of the furnace, and sufficient to supply two such furnaces. The vein is from 12 to 14 feet wide, and grows wider as it descends deeper—a hand can raise from 2 to 3 tons of ore in a day; one yoke of oxen and a cart can supply the furnace with ore, limestone, and sparr for flux; pig-sand, moulding-sand and tweer-clay. There is no furnace in said state can raise and deliver rock ore of equal value, on the furnace bank, for so small a sum per ton; the ore melts easy: The furnace makes from 25 to upwards of

¹ A. A. Haines, *A History of the Township and of the North Presbyterian Church of Hardystone, Sussex County, N. J.*, p. 81.

² J. M. Swank, *Iron in All Ages*, p. 117, says it was built in 1770, and Bishop and Pearse give same date; J. P. Snell, *History of Sussex and Warren Counties*, p. 80, says it was erected in 1772.

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30 tons of mettles per week, of an excellent quality, both for hollow ware and bar iron.

Trenton Federalist, December 23, 1800.

From Samuel Sharp the furnace and adjacent lands passed to his son Edward, who in 1810 sold nine tracts of land containing about 4000 acres to Dr. Samuel Fowler and John Odell Ford, for a little less than three dollars an acre. Dr. Fowler was chiefly interested in the development of the mineral lands, while Ford was a practical iron manufacturer and devoted his attention to the operation of the Franklin Furnace. In a petition of the ironmasters addressed to Congress in 1816, he is given as the proprietor of the furnace.

In 1816 or 1817, Ford transferred his interests to Dr. Fowler, who began an extensive series of experiments to utilize the Franklinite ores in the manufacture of iron. While his efforts would hardly be called successful so far as they related to the manufacture of iron, they did result in producing a substitute for white lead.

In 1832, the old Franklin Furnace was entirely rebuilt, and during the next six or eight years was continued in operation under Dr. Fowler and his associates. After the death of Dr. Fowler, many changes in ownership of the ore property took place, and one of the most bitterly fought legal battles—a litigation extending over a period of nearly half a century—was begun.

The subsequent history of these works belongs largely to the zinc industry. While pig iron was later manufactured at Franklin, the story of these operations, because of their modern processes, need not be recited here. It was operated under a successive line of owners, among them the Franklin Furnace Company, Oliver Ames & Son, the Boston Franklinite Company, and the Franklin Iron Company, all of whom were at one time or another mixed up in the litigation over the right to certain ores on the lands around the furnace.

In passing, it may be noted that oxide of zinc as a base for white paint was first used by Dr. Fowler in painting his house at Franklin in 1830. While the mines around Franklin Furnace now furnish a large part of the world's supply of zinc and zinc compounds, its development was very slow and attended with great financial loss. For nearly half a century the chief interest in these ores was based on their iron content, while today the zinc which they contain is many times more valuable, and the extraction of iron almost entirely neglected.

GLOUCESTER FURNACE

Gloucester County

now

Atlantic County

GLOUCESTER FURNACE, located on Landing Creek, a branch of the Mullica, or Little Egg Harbor River, opposite the present village of Lower Bank, was established in 1813 by John Richards, a second cousin of Samuel Richards, the owner of Weymouth Iron Works, and a son of James (and Mary) Richards, a brother of William Richards of Batsto. In 1807, John Richards came to Batsto and was employed by his uncle William for a number of years, afterwards going to Weymouth Iron Works where he became assistant manager and then manager.

At the height of its activity the village, which was called Gloucester Furnace, contained about twenty-five houses and was one of the important places on the stage route from Camden to Leedsport. This furnace is mentioned in 1827, when the Post Office Department asked for proposals to carry the mail once a week from Woodbury to Beesley's. Besides the furnace there was also a gristmill and sawmill operated under the same management, and employment was given to nearly 125 men, who with their families made up a population of about 300 persons.

About 1825 George Richards,¹ Mark Richards, and Benjamin Jones of Hanover Furnace acquired the Gloucester Furnace property and five years later sold it to Thomas S. Richards,² a Philadelphia merchant, and his cousin John Richards for \$35,000 for the land and \$15,000 for the personal estate. The estate then consisted

¹ George Richards lived in Pottstown, Pa., and was a brother of Mark Richards, who was a prominent iron merchant in Philadelphia. They were descendants of Johann Frederick Reichart, whose name was anglicized into Richards. During the War of 1812 the Governor of Pennsylvania, in directing the adjutant general to procure eight tons of various sizes of shot and cannonballs, stated that they could be had of Mark Richards. (*Pennsylvania Archives*, Second Series, XII, 768.) In 1833 he and James J. Rusk applied to the Philadelphia City Council for permission to supply gas lights to private consumers, offering in return for the franchise to light four lights in each square free of charge.

² Thomas S. Richards was the son of Samuel Richards of Weymouth and Atsion Iron Works. John Richards was the second cousin of Samuel Richards.

New Jersey Forges and Furnaces

of over 16,000 acres of land, on which were a charcoal blast furnace, sawmill, tenant houses and other improvements. T. F. Gordon in his *Gazetteer of New Jersey*, published in 1834, says the furnace made annually about eight hundred tons of iron, chiefly "county castings," sash weights, etc., while A. M. Heston also mentions among the products stoves and lamp posts, the stoves being an invention of Dr. Nott of Albany. In the course of a few years the chief product became cast-iron water pipe.

After the death of Thomas S. Richards, John Richards continued to operate the furnace until 1848, when he moved to Mauch Chunk, where he engaged in the iron business. The Gloucester Furnace went out of blast about this time, and in 1853 the property was sold to Stephen Colwell, who the following year re-sold it to some Philadelphia men.

This tract offered many attractions to those of foreign birth who desired to escape the constant assaults of the so-called "Native Americans." An organization was formed under the name of "The Gloucester Farm and Town Association," the tract opened up, and an active canvass made among the German element for settlers. This is the origin of the present Egg Harbor City, which embraces a part of the old Gloucester Furnace Tract.

There were two dams on Landing Creek, the one nearer the mouth operating the water wheel for the furnace and the upper one furnished the power for the gristmill and sawmill. No traces of the old furnace site are visible today, but the large quantities of slag which may still be found in the vicinity of the lower dam furnish a clue as to its general location.

GREENWICH FORGE

Sussex County

now

Warren County

THE origin of Greenwich Forge, which was located on the Musconetcong Creek, about four miles from its mouth at what is now named Warren Glen, is not definitely known. It was, however, well established and making iron before July 1750, as is indicated by the following letter from Jacob Starn to the clerk of the Moravian settlement at Bethlehem, Pennsylvania:

Greenwich Iron Works, 12 July, 1750.

Mr. Frederick Oerter
Clerk at Bethlehem.

Sir:

This is to desire you to please to order something from Doctor Otto to cure persons that is poisoned in mowing grass—and please order your saddler to make conveniences in my saddle to carry a pistol on each side. I have been informed that you have a set of wagon wheels ready made. If you have, I should be glad if you would send them along with your wagon, and you will much oblige

Your humble servant,

Jacob Starn.

P.S. Pray don't fail to send the above things when your wagon next comes this way for iron.¹

In the absence of proof to the contrary, it is likely that these works were established by Jacob Starn, whom we know was the sole owner of the Greenwich Forge property when he sold a one-half interest to John Hughes of Philadelphia. According to the agreement of sale which is dated May 1, 1761, Jacob Starn owned a tract of 1000 acres of land situated between the Musconetcong and Pohatcong Creeks, on which there was an iron forge, a gristmill and a sawmill. The partnership also included equal participation in the profits and losses arising out of a five-eighths interest in the opera-

¹ W. C. Reichel, *The Crown Inn near Bethlehem*, p. 88.

New Jersey Forges and Furnaces

tion of the Oxford Furnace, which Starn had rented in order to secure a supply of pig iron for the Greenwich Forge. The product of the forge and the excess iron from the furnace were to be sent to the Philadelphia market, and Hughes was to receive a commission of two percent on all business done on account of these works, while Starn was to have one hundred pounds per annum for superintending and managing the furnace and forge. From time to time notices appeared in the newspapers for servants who had run away and for the arrest of whom rewards were offered by Starn or Hughes.

In the *New York Gazette, or Weekly Post-Boy*, August 8, 1765, the jailer at Perth Amboy advertised that he had in his custody two negro men, "one a yellow Fellow, named Jack, the other black, named Ezekiel. They say their Master's Name is Jacob Starne, and that he is the Owner of a Forge on Muskenecunk."

It is quite evident that the motive which actuated John Hughes in buying a moiety of Greenwich Forge was for his son Hugh, who, after graduating from the University of Pennsylvania in the class of 1761 and completing his law studies, decided not to enter this profession. On July 25, 1764, Hugh Hughes married Martha Brackenridge and soon moved to Greenwich Forge. The next year William Cox, New Jersey agent under the obnoxious Stamp Act, having resigned, John Hughes, father of Hugh, applied to Benjamin Franklin to use his influence to have his son appointed to the office. It was fortunate for the young man that this appointment was not made. However he soon took an active part in the civil affairs of New Jersey. He was appointed sheriff of Sussex County, in 1769 and elected a member of the Provincial Congress of New Jersey for the years 1774-75, of the General Assembly in 1780, and of the Council for 1781-83, and also held the office of county judge for several terms.

According to the will of John Hughes, dated January 31, 1772, quoted in Mrs. A. M. Holstein's *Swedish Holsteins in America*, he bequeathed the lands, mills, forges, etc., "herein before held in partnership between me and Jacob Stern, [Starn] and by the said Stern conveyed to my said son and me as joint tenants," to his son Hugh, making him sole owner. The date of the transfer from Starn to Hugh Hughes, of the other half of the forge property is not known, but it was probably in the early part of 1765, for in September of that year, when a negro boy ran away, the reward is offered by John Hughes in Philadelphia, or Hugh Hughes at the Forge. Confirming this, Hugh Hughes inserted the following advertisement:

Greenwich Forge

To be Rented, and may be entered on the 20th of April next, A Certain Forge consisting of four fires and two hammers, with a grist mill and saw mill, and all necessary buildings, situated in the lower part of Sussex County, West New-Jersey, on Musconetung river, known by the name of Greenwich Forge, with about 1800 acres of land, and conveniently situated to several furnaces. There will also be rented, with the works, seven Negro men, who have been employed for many years past in the Forge, and understand the making of iron. For terms apply to HUGH HUGHES, on the premises.²

Pennsylvania Chronicle, November 14-21, 1768.

It is not known who rented the forge between the date of this advertisement and the year 1774, but in the latter year, one Andrew Sproull was managing it. He advertised for the return of two Irish servants and a man who had "run away from his bail" early in that year.

From the account books of the Greenwich Forge in the library of the Bucks County Historical Society, the operators and lessees of this forge during the next few years are somewhat confusing.

After George Taylor, the Pennsylvania "Signer," had been dispossessed of the Durham Furnace in 1778, he evidently became connected with the Greenwich Forge, in which Richard Backhouse, later one of the proprietors of Durham, was associated with him. This partnership extended from 1779 to 1780. In the account books is an item of wages paid on May 4, 1779, by Backhouse to one Jacob Adenfelt, and a few weeks later other receipts and expenditures for the account of Backhouse & Williams, and Samuel Williams & Co. This firm certainly operated the works as late as April 3, 1780. However, Taylor apparently retained an interest down to the time of his death, February 23, 1781. On April 14, 1780, he is credited with £7,022/5/0 Continental Money, and the forge charged with the same amount. The next day, on the Durham Furnace Ledger, Backhouse is credited with £9,223/8/2½ and the Greenwich Forge charged with the same, showing that the furnace had bought out the Backhouse leasehold of the Greenwich Forge.

The following letter gives some idea of the conditions with which these early forge masters had to contend:

Greenwich Forge, Feby. 24, 1780.

Dear Sir:

I have Sent by Cuff 5 ct 14 lb Bar Iron and Body Waggon full of Coal, the Roads is So bad I was afraid to Send the Coal

² At that time his father, a half owner of the works, was living at Charleston, S. C.

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Waggon, it is so Much heavier. Cuff thought he could not get Along—It Freezes so Excessive hard I am afraid We Shall be Stopt again at the Forge as it is as much as I Can Do to keep the Wheel A going now—As Soon as the Weather Moderates a Little I'll Be over to go with White I cant leave the Forge Before as I am obliged to Be here Every Bloom I am Sir with Due Respect

Your humble Servant

Saml. Williams.

Mr. Richard Backhouse
Springfield.

During this time, Hugh Hughes owned the property, and one entry on June 3, 1782, accounts for a payment to him of £609/15/0 as "Rent and Wages of negroes, etc."

According to the *New Jersey Gazette*, April 17, 1782, the partnership between Richard Backhouse, Samuel Williams, and Moses Yamans at Greenwich Forge was dissolved on March 15, 1782, and Samuel Williams continued the operation of the forge. From this it appears that Moses Yamans became interested in the forge, possibly through advances which he made to continue its operation.

On January 20, 1783, Thomas Wright and Richard Backhouse entered into a partnership to operate Greenwich Forge. The conditions of this partnership, which was for one year from April 1, 1783, are exceedingly interesting. It provided:

That they are only to be accountable to each other, and if either of said Partners purchase anything on Credit for the use of the said Works the said Partner so purchasing alone shall be accountable to the Creditor and in no wise the other Partner; and also any Agent purchasing anything for the use of the said Works shall not make the said Backhouse liable for the said debt to the seller but only to the said Thomas Wright at the settlement of the Companies Accounts.³

There was more or less friction between the partners, and about three months after the forge had been operating, Wright wrote to Backhouse:

I am much at a loss to Frame my Ideas to your Treatment, and I acknowledge I have been taken in at the most Suttle Terms by you in our Agreem't at first, so therefore you still want to prosecute the same plann, I never was under any obligations to you in the past, nor neither do I mean to be, because I have no occasion. I request that a person may be appointed Immediately to examine our Books how they stand for I will not put up with such affront.⁴

³*Durham Papers*, Bucks County Historical Society.

⁴*Ibid.*

Greenwich Forge

Matters were patched up, and Samuel Williams was engaged as manager. He was to take the Negroes at the same rate of pay they were getting, and to make and draw iron at £24 per ton. In September, 1783, the forge was making "anchovies," which were blooms that had been treated in the "finery," the middle being hammered to the desired shape, while at both ends was left a square rough knob to be wrought in the chafery.

At the expiration of this partnership, Richard Backhouse continued as lessee for about a year, and then John Stotesbury took it over. He was a son-in-law of Colonel Hugh Hughes of New York and a first cousin of Hugh Hughes, the owner of the forge. His daughter Sidney Maria married Philemon Dickerson, who was a member of Congress, Governor of New Jersey, and a Judge of the United States District Court for many years. Colonel C. S. Scranton quotes the following letter, referring to this transfer:

To Richard Backhouse, Esq.,

Sir:—I have no objection to receiving John Stotesbury as a tenant for the residue of the term of the lease of the Forge Mill & Premises in the room & place of yourself if agreeable to you.

I am Sir,

Your humble Servant
HUGH HUGHES.

GREENWICH FORGE, Jan. 31st, 1784.

This arrangement was duly executed, as evidenced by the following receipt:

Received, Feb. 5, 1784 of Richard Backhouse an assignment of the above mentioned leases witness my Hand and Seal this fifth day of February, anno dom one thousand seven hundred and eighty four.

JOHN STOTESBURY. (Seal)

Sealed and Delivered in the presence of us

EDWARD CAHILL
MORDECAI MORGAN.

For a few months after this lease was taken over, Stotesbury had one John Gibson as a partner. Stotesbury & Gibson on May 28, 1784, paid Richard Backhouse for one half of his share of the chattels of Greenwich Forge £16; for his stock of goods at the same place £6/5/0, and for one half interest in the Forge £108/17/15. The forge was also charged on the furnace books for the taxes paid.

In 1788, Thomas Anderson, another son-in-law of Colonel Hugh Hughes, became the lessee of Greenwich Forge, coming here from

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Chelsea Forge where for four years prior to this time he had been manager or part owner. Anderson did not depend entirely on the "cinder iron" from Durham, but in 1789 was getting some pig iron from the Hibernia Furnace. Among the later operators was one Adam Runkle, who, in 1802 advertised that a steel founder would "meet with good encouragement" at Greenwich Forge.⁵

The forge was abandoned some time before 1834, and is not mentioned in T. F. Gordon's *Gazetteer of New Jersey*, which was published in that year. On the site John M. Long erected a gristmill, long since burned down.

As to the articles manufactured at Greenwich, under the Anderson management, little is known, but they were, no doubt, much more diversified than under the prior lessees. We have definite information that Anderson made forged plowshares, and in a letter he mentioned sending "six Share Moles & Land Sides" to Durham.⁶

⁵ *Trenton Federalist*, May 18, 1802.

⁶ *Bucks County Historical Society Papers*, III, 13.

GUINEA OR MUIR'S FORGE

Morris County

SOME time before 1774, Colonel John Munson built the forge on the Rockaway River, about a mile below White Meadow Pond, which was at one time, known as Guinea Forge. Colonel Munson took an active part in the Revolution, and was colonel of a regiment of militia from Morris and Sussex Counties which saw quite a little active service during the War. Under orders of the Privy Council, dated September 12, 1778, a part of Colonel Munson's Regiment was ordered to guard the "frontier to the northward from the incursions of the Indians and disaffected persons."¹

Benjamin Beach was also interested in the tract of land, on part of which the forge stood. At the time the forge was built neither Munson nor Beach had perfected title to the land so occupied. We learn from an application which was filed with the Board of Proprietors of East Jersey in 1785 that Munson and Beach had had a tract of 2600 acres surveyed to them, but had paid no money except the surveyor's fee and the cost of recording the survey, Colonel Munson, being unable to carry on his forge, sold it and the right to perfect title to his portion of the land to Joshua Winget, who transferred it to Samuel Crane. The latter sold to Abijah Sherman, who failed before payment had been made for the property, whereupon it again vested in Crane, who also soon became insolvent. So far no deed had been passed from the Proprietors, so that Munson and Beach stood on the records as entitled to receive a deed for the original survey. Beach petitioned for his one-half of the land surveyed and recorded, stating that as Colonel Munson did not care to take up his right, Abraham Kitchel and Mark Walton would take this portion, "provided they can have it for a reasonable sum."

Kitchel and Walton, who obtained title to the Guinea Forge under this arrangement, operated the works for a short time only. Kitchel then became sole owner and transferred his interest to Bernard Smith who, in 1802, conveyed the property to Israel Canfield. Later it was owned by Colonel Thomas Muir, during which time it was known as Muir's Forge. The last owner was Hubbard S. Strickle.

¹ *Tuttle Papers*, p. 63.

HACKLEBARNEY OR BUDD'S FORGE

Hunterdon County

THE Hacklebarney Forge, located in Chester township near the Falls of Lamington, (now Pottersville, formerly Potter's Mills), about twelve miles from Union Iron Works, was built about 1763 by Christopher Beekman.¹ In the *Pennsylvania Gazette*, April 28, 1763, Beekman offered the property for sale, which was described as "situated in the County of Hunterdon, on Lamenton River," and consisted of "A good new Forge or Finery with three Pair of Bellows, and three Fire-places." There was attached to the place about fifty acres of pasture and meadow land, but no woodland. Beekman stated, however, that timber or woodland could be secured at reasonable rates within a short distance of the forge. From subsequent events, he did not at that time find a buyer, and it was offered for sale by Samuel Tucker, sheriff, at the suit of Andrew Leake, Peter and Henry Schank, John Demund and others on April 16, 1764. The advertisement for this vendue described the property as containing 335 acres of land situated in Twixbury [Tewksberry] and bounded on one side by the Alametunk River.² Besides the usual farm buildings and dwelling house, there was on the property "a Forge for making Bar-iron, with three Fires, Coal-houses, and Houses for Workmen to live in, near the Forge, which is on a fine stream, called Alametunk, in a fine Part of the Country for Wood, for making Coal. Also sundry Negroes, Women and Children . . ."

It is not known who bought the property, but six months later two new names appear in connection with it. This is shown by the following notice offering it for sale:

TO BE SOLD

A New Forge of three Fires, at Lamaton Falls, with 200 Acres of Land, and lies no more than 12 miles from Union Iron-Works. . . . The forge will be sold with, or without the Land. Any Person inclining to purchase the same, may apply to

¹ Munsell & Co., *History of Morris County*, says it was built by Allen & Turner in 1754. This cannot be correct, for it would not have been called a new forge if ten years old, as it was in the advertisement of 1763.

² *Pennsylvania Gazette*, March 1, 1764.

Hacklebarney Forge

Michael Abeel, or John Bunn, living near the Premises, by whom a good Title will be given.

New York Mercury, November 26, 1764.

There is now a considerable gap in the information available, but like so many of the forges in this vicinity it was no doubt abandoned during the Revolution. It eventually became the property of Samuel Ross, by whom it was sold in 1786 to Frederick Bartles, who in 1790 gave a mortgage on it to Randall & Stewart of New York. The property at that time contained only about one hundred acres of land and was described as part of the large tract bought by John Wortman, Sr., in 1771, from Peter Schenck. Hon. Daniel Budd was in partnership with Frederick Bartles, and they carried on the forge for some years, being succeeded by Andrew Bartles and his father-in-law, John Plum. About 1810 Nicholas Einams was operating the plant, which then contained two forge-fires. It was still in existence in 1834, when T. F. Gordon's *Gazetteer of New Jersey* was published.

The ore for this forge was obtained from the Hacklebarney Mine, which was located on the Black River about a mile and a half southeast of Chester Village. It was mined by surface digging on the slopes along the river. There were two kinds of ore in these beds, one of a loose and crumbling character and the other a hard black variety which had to be roasted before it could be worked in the old forges, and was therefore seldom used. The iron made from the loose ore was particularly adapted for the general run of work of the village blacksmiths.

HAMBURG FORGE AND FURNACE OR IRON WORKS

Sussex County

THE Hamburg Forge was built in 1792 by Jesse Potts and his brother of Trenton, and was named after Hamburg, Germany, whence large quantities of iron were, at that time, being exported to America. Dr. Haines¹ says it is surmised that these men were descendants of Thomas Potts, who came to America with Mahlon Stacey and others in the ship *Shield*. He is said to have been a relative of Thomas Potts, who was sheriff of Sussex County in 1774 and represented that county in the Provincial Congress of New Jersey in May, 1776. In the latter body he was opposed to the deportation of Governor Franklin and in this stand he was supported by Abia Brown of Sharpsborough Iron Works, Hugh Hughes of Chelsea Forge, and John Allen—all of whom except Allen were later staunch friends of the colonies.

The forge was situated on the Wallkill a little below the Sharpsborough Works and was the most extensive in this region. The venture proved unsuccessful and Joseph Sharp, Jr., took possession, but soon afterwards dismantled the works. During the Potts ownership, it was known as the Hamburg Iron Works.

About 1830, the Hamburg Manufacturing Company built the charcoal, hot-air blast furnace on the site of the lower forge, formerly part of the Sharpsborough Iron Works and later operated by Joseph E. Edsall. This company was closely affiliated with the Clinton or Pochuck Mine. The Hamburg Company employed a large number of men in the mines and also wood choppers and charcoal burners. However, following the panic of 1837, the company was forced to suspend. Edsall & L'Hommedieu operated the furnace from 1838 to 1845, after which it was run by Joseph E. Edsall until 1850, when the plant was abandoned and allowed to fall into decay.

¹ A. A. Haines, *History of the Township and of the North Presbyterian Church of Hardystone, Sussex County*, p. 86.

HAMPTON FURNACE AND FORGE

Burlington County

AT THE junction of Robbins Run and Batsto River in the southwestern part of Burlington County was an old furnace, the name of which is still used in connection with many surveys in this part of the state since the original Hampton Tract has now been broken up into numerous holdings. It is another of the early bog-ore furnaces whose builder is not known. The first definite mention of Hampton Furnace, so far located, is in a deed dated May, 1795,¹ wherein Clayton Earl conveyed to William Lane and John W. Godfrey, both of Philadelphia, for a consideration of £4000, one half part "of and in All that Certain Furnace called Hampton Furnace and also of and in all that Certain Sawmill" known by the name of "Unknown Mill," together with a one-quarter interest in the "Skit Mill" and parcels of land attached with the following interesting reservation,

"Except timber sufficient to repair and keep up the present pasture Fence and fire wood for one family forever."

From this we learn that Hampton Furnace was in existence at the time of the conveyance.

The record of tax assessments for Northampton township, Burlington County, for 1795, show Lane and Godfrey as owning 2050 acres of unimproved land and a furnace, and also name a number of householders as living at the furnace.

The other half was owned by Richard Stockton of Philadelphia and was sold by his heirs to Garret and William Ashbridge by deed of January 2, 1797. Lane and Godfrey in 1799² conveyed their interest to the Ashbridges, who then became owners of the entire property. The latter, according to the assessments of 1806 to 1809, added several thousand acres to the estate. In 1812 Joseph Doran was assessed for 4900 acres of land and a forge with six fires,³ and thirteen years later (1825) it passed to Samuel

¹ *Burlington County Deeds*, Book E, p. 3.

² *Ibid.*, Book F, p. 206.

³ *Tax Duplicates, Old Washington Township*, Public Record Office, Trenton, N. J.

New Jersey Forges and Furnaces

Richards. In 1834, T. F. Gordon in his *Gazetteer of New Jersey*, says: "The Hampton Furnace and Forge at the head of Batsto River is now in ruins," and in another place he says that the Hampton Furnace is a part of the landed estate of Samuel Richards. Both the forge and the furnace are marked "in ruins" on Gordon's *Map of New Jersey* published in 1828. Mr. A. J. Rider, the present (1928) owner of a considerable part of the Hampton Furnace Tract, states that the forge and furnace were some distance apart and located on different streams. Furthermore, there are two ponds in this locality, one of which is called, even to this day, the "Forge Pond" and the other the "Furnace Pond."

The last one to operate the works appears to have been Joseph Austin, who, sometime before 1828, dismantled the forge and moved it to Dover, the furnace having no doubt been abandoned soon after Samuel Richards obtained title.

About 1860, W. W. Fleming, son-in-law of Jesse Richards, was the owner of the real estate, but at that time every vestige of the ironworks had disappeared.

Wagon tire, wagon axles, flat and round bar iron, "wagon arms," sledge hammers and hollow ware were made at Hampton Furnace. The major part of the output was carted to a wharf at Lumberton for shipment by boat to Philadelphia.⁴

In the minutes of The Philadelphia Society for the Promotion of Agriculture for May 13, 1806, it is stated that castings for a mould board, invented by David Peacock, which were in great demand, were made at Hampton Furnace.⁵

This was not, however, the first attempt to introduce iron plates as mould boards. In 1800, Robert and Joseph Smith obtained a United States patent for such a mould board and had them made by Charles Newbold at one of the South Jersey furnaces, but which one is not known. Later Robeson and Paul developed the invention and were subsequently accused by the Smiths of "overreaching" them. As this firm was largely interested in Martha and Weymouth Furnaces, it is quite likely that the mould boards were cast at one of these works, although no mention is made in any records so far located, of this article as one of the products of either of the furnaces.

When the bog ores in the vicinity of Hampton Furnace were exhausted the works were run on ore which was brought to Lumberton by boat and the finished products furnished return cargoes.

⁴ *Atsion Furnace Books*.

⁵ C. R. Woodward, *The Development of Agriculture in New Jersey*, p. 60

HANOVER FURNACE

Burlington County

A GREAT deal of romance has been woven around Hanover Furnace. Many tales and traditions have come down to us of the activities of this works during the struggle of the American Colonies for freedom and the later fight for our rights on the high seas. Unfortunately most of the stories which have been widely circulated are pure fiction so that it is somewhat difficult to separate the real history of this interesting establishment from the published imaginary reports. The works were located on the north branch of Rancocas Creek a few miles east of Brown's Mills, in Burlington County.

Joseph Ridgeway was the owner of a large landed estate in this vicinity, acquiring some tracts direct from the West Jersey Proprietors, for whom he was a Deputy Surveyor, and purchasing smaller parcels from early settlers. In 1791,¹ he conveyed to Joseph Howell, John Lacey, and Clayton Earl, for a consideration of £1150, a three-quarter interest in a number of parcels of land composing the Hanover Tract, a condition being that the purchasers were to erect at once a furnace thereon. By a deed dated October 11, 1792, Samuel Howell, Jr. obtained title for a consideration of £2000 to a one-quarter interest in a sawmill, ironworks, and furnace called "Mount Misery Saw Mills and Hanover Tract," but died before the transfer had been made, and his heirs became the owners of this portion. It is quite evident, therefore, that the Hanover Furnace was built by Ridgeway, Howell, Lacey, and Earl between 1791 and 1792. This is confirmed by the report of the surveyors on a road to be laid from New Mills (Pemberton) and Hanover Furnace, dated May 23, 1792,² and also by a deed from Clayton Earl, "iron master," to Benjamin Rowland and Joseph Roberts, dated May 10, 1793, for his share of the Joseph Ridgeway conveyance of 1791, "whereon the said Lacey, Earl and Ridgeway have since built the Iron works and furnace called Hanover Furnace."³

¹ S. S. O. *Deed Book AR*, p. 62.

² *Burlington County Road Book*, A, p. 197.

³ *Burlington County Deeds*, Book D, p. 361.

New Jersey Forges and Furnaces

On the death of Samuel Howell, Jr. in 1803,⁴ the administrators of his estate offered for sale a one-quarter interest in the iron works along with a similar part of the Mount Misery sawmill. In 1809, the Hanover Company was assessed on 800 acres of unimproved land and a furnace. During the next year there were several changes in the personnel of the partnership, the Howell family having acquired the interests of all the other partners except that of John Lacey. Benjamin Jones of Philadelphia, an extensive "ironmonger" who had married as his second wife Mary H. Howell, granddaughter of Samuel Howell, Sr., began buying out the other partners. By a codicil in the will of Samuel Howell, Sr. one undivided half part of Hanover Furnace and Mount Misery Saw Mill Tract was bequeathed to his granddaughter, Mary H. Jones. Benjamin and Mary Jones deeded this moiety or half interest to William E. Howell on February 26, 1808, and he re-transferred it to Benjamin Jones the next day⁵ for a consideration of \$9,000. On March 22nd, 1811, Jones secured the one-quarter interest of Thomas R. Howell,⁶ and in 1811 bought the remaining interest of John Lacey,⁷ this giving him entire control of the Hanover Company.

Subsequently Benjamin Jones became indebted to divers persons in large sums of money and in 1819 transferred all his properties to Mark Richards and William E. Howell, as trustees, who were specifically authorized to operate Hanover Furnace for the benefit of the creditors. So successful was this plant under the trustees that by 1826 all the indebtedness had been paid off and the properties again transferred to Benjamin Jones.

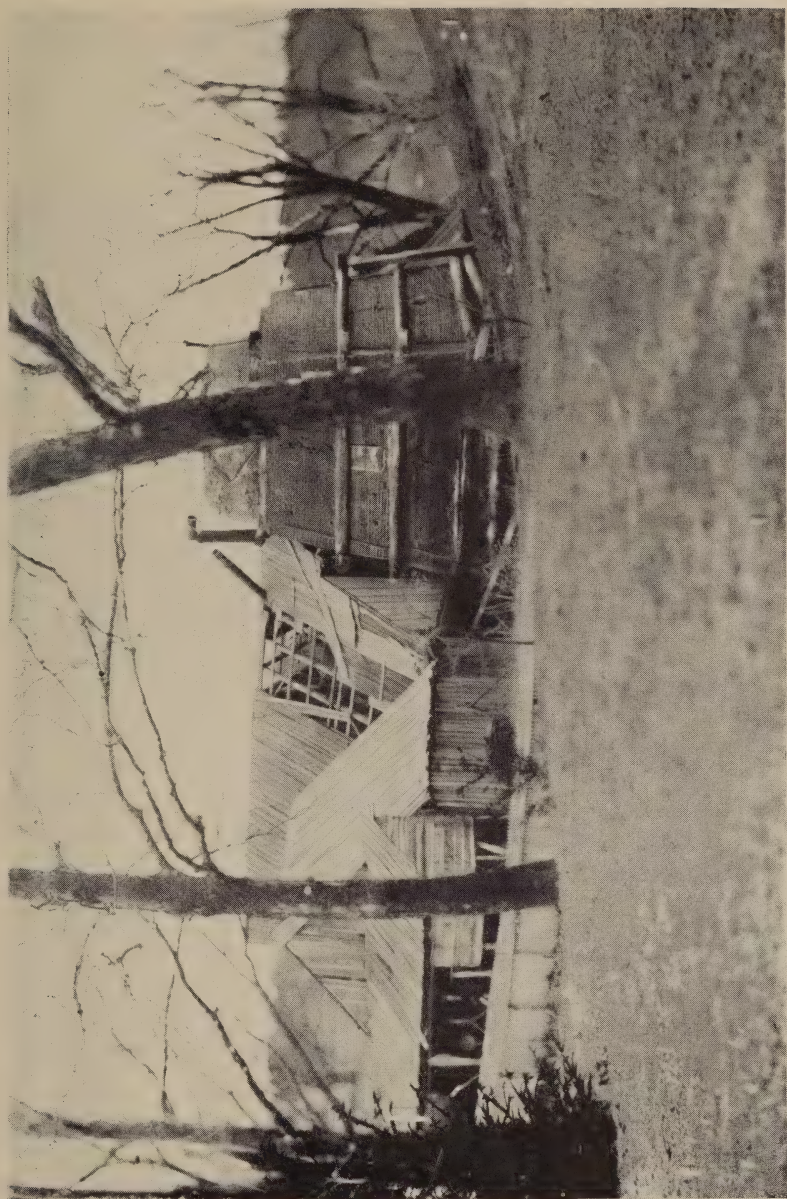
Benjamin Jones continued to operate the furnace until January 29, 1846, when, for a consideration of \$30,000 he sold the entire Hanover Estate to his sons Samuel H. and Richard Jones, who operated under this firm name of R. and S. H. Jones. Additional lands were bought and many expansions made under this management, which continued until about 1850, when Richard Jones went to Newark and organized the New Jersey Exploration and Mining Company, later the New Jersey Zinc Company. In 1853, he moved to Florence where he built a furnace, using some of the old Hanover Furnace equipment in the new plant. Samuel H. Jones remained at Hanover Furnace. One of the apparent weaknesses of Benjamin, Samuel, and Richard Jones seems to have

⁴ *Trenton Federalist*, June 20, 1803.

⁵ *Burlington County Deeds*, Book T, p. 494.

⁶ *Ibid.*, Book X, p. 590.

⁷ *Ibid.*, Book V-2, p. 434.



RUINS OF HANOVER FURNACE

Hanover Furnace

been the buying of unnecessary quantities of land, much of it worthless swamps. The inroads made by the anthracite furnaces of Pennsylvania on the bog-ore industry of West Jersey, and the burden of carrying these acres and acres proved a heavy drain on their financial resources. From about 1851, their equity in the property was at times, judged by the number of mortgages and liens recorded against them, only nominal. Work at the furnace finally stopped in 1863-64.

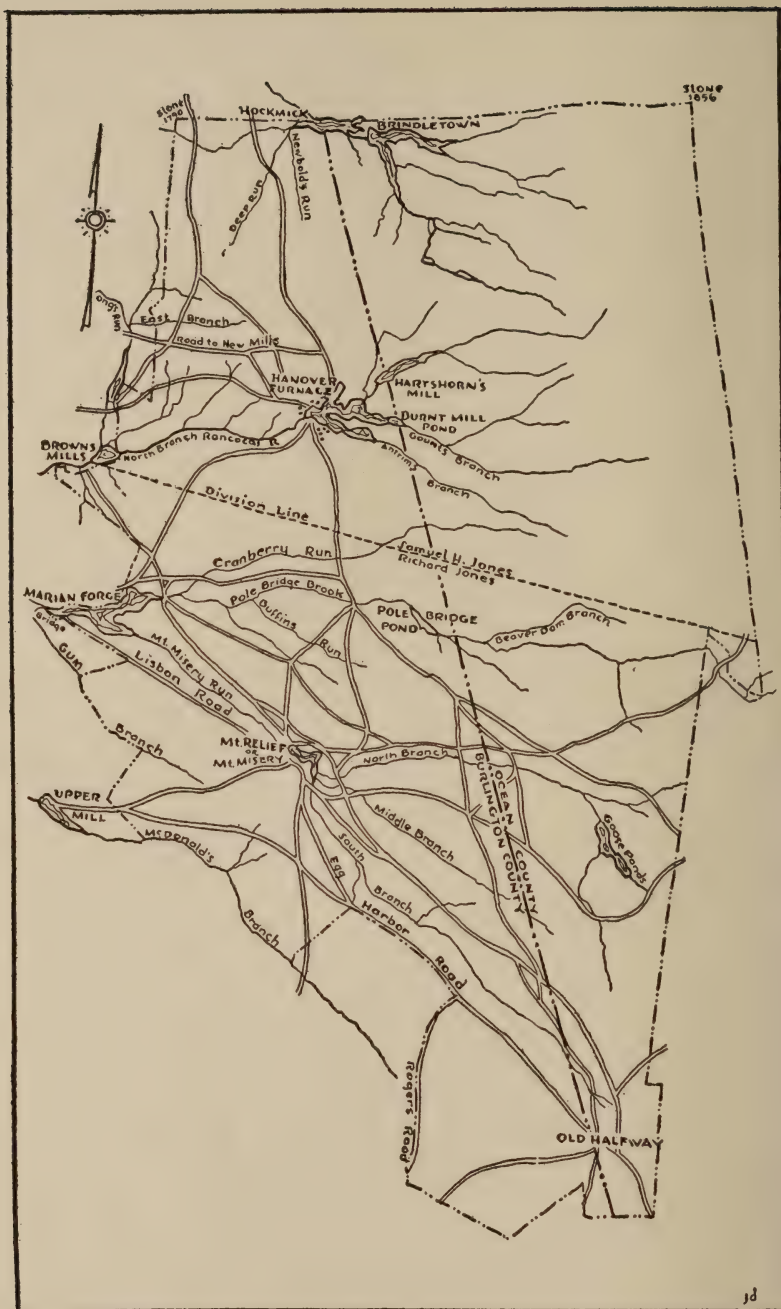
In 1861, a division was made of the Jones property, and from the map accompanying the commissioners report we learn that Samuel H. Jones, who was allotted the Hanover Furnace section, obtained 19,308 acres, while the heirs of Richard Jones received the southerly section including "Marian Forge" and 25,145 acres. Lawrence S. Pepper's interest in the property began in 1871, when he took a mortgage on 988 acres of the Samuel H. Jones Tract to secure a loan of \$15,000.

Of Samuel H. Jones little is known. He died in 1883 and by his will made provision for his two brothers, Benjamin W. and Richard, who do not appear to have been as fortunate as he was. He also provided for his son, Samuel H. Jones, Jr., and eight nieces and nephews. Richard, after retiring from the Florence Foundry about 1865-67, moved to Mount Holly where he died in 1890. He operated the Florence Works until 1864, when he retired from active business, and the works have been carried on by R. D. Wood and his successors.

Thomas Cross of Pemberton, whose father was at one time "boss ore-raiser" at Hanover Furnace and supervised the mining and digging of the bog ore, still remembers the old scenes despite his ninety-two years. He said the ore was mainly taken from the section just north of the furnace, now known as "Cranberry Hall," and when the supply was exhausted in this section Richard Jones bought or leased a farm near Jacobstown where he continued the digging until the ore became so poor it did not pay to work it. The next source of supply came from a farm which is still known as the "Jones Farm," on the edge of Juliustown, the ore from which became exhausted about the time the furnace was abandoned.

Mr. Cross said the "iron stone" layers ran from 18 inches to 2 feet in thickness. The furnace products were principally pig iron, sad irons, fireplace backs, stoves and water pipes.

After Richard Jones moved from Hanover the property was sold to A. J. Carpenter, who converted the plant into a nail-keg



THE HANOVER FURNACE TRACT, 1861

Hanover Furnace

factory, which, however, was operated for only a few years. It is not known what became of the old equipment, but it is quite likely that it was scattered among the nearby plants.

During the War of 1812, the furnace at Hanover was actively engaged in casting cannon balls, shells and cannon for the Federal Government. The writer has in his possession a four-pound and a twelve-pound cannon ball which were found in the ruins of the old furnace some years ago and were cast no doubt during our second war with England. They are much cruder than those used during the Civil War, but a decided improvement over the ones found on the battlefields of the Revolutionary War.

There is a persistent rumor that Commodore Stephen Decatur was at one time stationed at Hanover Furnace as an overseer, or inspector of certain contracts for the manufacture of war material. A careful investigation by Captain D. W. Knox, U. S. N., of the records in the Navy Department has, however, failed to locate any order or report which would connect him with these duties. Captain Knox further states:

It is suggested as a possibility that the elder Stephen Decatur, the father of the Commodore, may have been confused with his distinguished son. This man commanded privateers during the Revolution, was commissioned a Captain in the Navy in 1798 and was discharged in 1801 under the Peace Establishment Act. A small amount of correspondence of 1805 and 1806 in other manuscript records shows that he had powder mills, apparently in Frankford, near Philadelphia. . . . It is possible, however, that he may at some time have been connected with the making of guns or ammunition in Burlington County, N. J. which is so near Philadelphia.

Benjamin Jones was instrumental in establishing the road from Hanover to the "Old Monmouth Road," which was long known as the "Gun Road." After the war, large quantities of iron pipe were made for the Philadelphia Water Works and were, in the early days, either carted to the landing at Florence and transported by boat to Philadelphia or hauled by mule teams over the "Great Road" to that city. Later, through the energy of Benjamin Jones, a railroad was constructed from Kinkora to New Lisbon.

That much iron was produced at this furnace is evidenced by the large amount of slag at the site of the old works, the pile of which has lately been much depleted by the demands for this material for road building. A curious feature of the stack, was that it was built of blocks of stone which were held together by wooden hoops or braces.

HIBERNIA OR ADVENTURE FURNACE AND FORGE

Morris County

SAMUEL FORD in 1763 or 1764 erected a furnace on the Whippany River, about four miles north of Rockaway. In a deed dated November 23, 1765, a small tract of land is described as about three quarters of a mile above the new Furnace, called "The Adventure," the early name given to the Hibernia Furnace. In 1765 Ford, who was a nephew of Colonel Jacob Ford, Sr., and his wife sold "an equal and undivided third of the Hibernia Iron Works to each of two purchasers, James Anderson of Sussex County and Benjamin Cooper," trading as Anderson and Cooper. Two years later the other third interest was purchased from Ford by Lord Sterling. A letter to him from Garret Rapalje, dated New York, March 30, 1767,¹ says:

I congratulate you on purchasing part of the Hibernia Iron Works, and return you thanks for your kind offer; but at present, [it] don't suit me as I have large sums due to me in the country which I must endeavor to collect to pay my debts, or should be very glad to join your Lordship. But if agreeable, will purchase all your pigs, if they prove as good as what have been made, I will take all you can make for 3 or 5 years, at £6 per ton, proc., and settle accounts every 6 months. But would have all or none—as last fall Mr. Cooper engaged 50 tons to me, or 100, if could be made, and sold half to other people. And if I can be supplied with pigs from your Works shall not take any from Hanover, as I contracted with Colonel Hackett a few days before he died for 300 tons a year, which Messrs. Turner and Allen would rather not agree to our contract.

After these sales, Ford devoted his time and energies to the business of counterfeiting "Jersey bills of credit," and in 1768 participated in the robbery of the Treasury of East Jersey at Amboy. His former partner, Cooper, was one of his associates. Ford was arrested in 1773, but escaped to Virginia. Cooper and some others were arrested, tried and convicted, but with one exception all escaped punishment. Anderson and Cooper sold their

¹ *Proceedings New Jersey Historical Society*, First Series, VII, 112.

Hibernia Furnace

interests in the Hibernia Company during the year of 1771 to Lord Sterling.² Several tracts of land in the vicinity of Hibernia had already been acquired by Sterling, as shown by deeds dated in 1763, 1766, 1768, and 1769. He was therefore entirely familiar with the local situation when he first entered the Hibernia Company.

One of the greatest difficulties which the early ironmasters had to combat was dissipation among the workmen. To overcome this the Legislature in 1769 passed a law giving the owners, managers, or clerks authority to sell to any employees of the Hibernia Works such quantities of rum or other strong liquor as they might from experience find necessary.³ By the same act, no tavern or inn within four miles of the works was permitted to sell any of its workmen strong drink under a penalty of ten shillings for each offense. Notwithstanding this law, the men were able to obtain liquors to such an extent that frequently the furnace would have to slow down production for lack of experienced men to operate it.

Joseph Hoff, a brother-in-law of Benjamin Cooper, came from Hunterdon County in 1774 to take charge of the Hibernia Works for Lord Sterling. In the same year he made the following announcement:

HIBERNIA FURNACE

MORRIS-COUNTY, NEW-JERSEY

The late Hibernia Company at this place is dissolved, and the works are now carried on for account of the Right Honourable the Earl of Sterling, the present sole proprietor thereof—A number of wood cutters are now wanted at these works, also some good miners. A plentiful supply of all kinds of necessities for the workmen, is now laid in, and will constantly be kept up. Three shillings per cord will be allowed for wood-cuttings. Who ever inclines to work at this place, may depend on meeting with civil treatment, honest dealing, and punctual pay, from

JOSEPH HOFF, Manager.

January 26, 1774.

Rivington's New York Gazetteer, February 3, 1774.

² In the issue of the *Pennsylvania Chronicle*, April 22–29, 1771, Joseph Sharp or Alexander Tod offered the Hibernia Iron Works for rent. Careful investigation fails to identify Sharp with this plant, and it is believed to be a mistake for Sharpsborough Iron Works.

³ *Session Laws of New Jersey*, 1769, Chapter XIX, p. 109.

New Jersey Forges and Furnaces

Active operations now seem to have been carried on, and on May 20, 1775, he writes to Messrs. Murray that

The Furnace goes extremely well we shall make at least 20 tons weekly. I think about 68 Tons now made & 5 tons gone to Elizabeth Town.

Two months later *Rivington's New York Gazetteer*, July 27, 1775, contained an advertisement for "A Number of Labourers, to work at the coaling and other business," and on December 7, 1775, he advertised for "a Number of Wood Cutters," to whom "TWO SHILLINGS and NINE PENCE per cord will be given and the Balance paid as soon as the Quantity agreed for is completed."

The letters of Joseph Hoff give us an authentic account of the activities at Hibernia and the difficulties in procuring powder, salt, flour, horse feed, rum, and other articles. In one of them he writes:

Our people are so distressed for the rum that I believe I must have one hogshhead, let the price be what it will. They must pay accordingly.

On June 9, 1776, he says:

All the miners have been quite idle for want of powder. The furnace will soon get ahead of us, using the ore so fast, when it is impossible for the miners to keep her going.

The New York agents in 1776 were Robert and John Murray.⁴ This activity was undoubtedly due to the orders which the Hibernia Furnace had for ammunition for the Continental Army. On April 6, 1776, Hoff, writing to the Murrays in New York, said: "Lord Sterling writes me if we can get the moulders he will find us work making cannon, and in consequence has enclosed me a letter to Henry Wissner, Esq., of Goshen, for one or 200 pounds of powder." Again on April 30th, he says: "Lord Sterling wrote he would find us work at casting cannon that would weigh 20 or 30 cwt., which are 9 or 10 pounders, but nothing heavier." He quotes the prices for casting the "small Guns" at "7d York

⁴Robert and John Murray were prominent merchants of New York. Early in 1775 they brought down on themselves the displeasure of the New York and Elizabeth Town Committees, because of their having landed goods out of the ship *Beulah* from Londonderry contrary to the recommendations of Congress. Their house and store were shut up and a seal was placed upon the latter. In a petition to the Continental Congress they asked that they "be restored to their former situation with respect to their commercial privileges." This was granted after they had made apologies for their breach of the rules as laid down by the associated merchants.

Hibernia Furnace

money" per pound. In a letter to Colonel Moylan, Quartermaster General of the Continental Army, under date of August 31, 1776, he writes:

A certain Mr. Thomas Ives apply'd to me to make a number say 36 or 38 three pounders Cannon for the Gondoliers. We have two ready for tryal some days past. I wrote twice to Mr. Ives to come upp for that end but not having heard from him I yesterday charged the Cannon with 1 full Cartridge of powder made upp for the three pounders and 2 Balls and have the pleasure to inform you it stood and is undoubtedly good. I made no agreement with Mr. Ives as to the price and as a most enormous expense attends the Business I do not chose to go on till I hear from you. I have consulted with Mr. Faesh and Messrs. Ogden Iron Masters and we are clear in it we cannot make Cannon at less than £50 proc. per Ton and Powder to prove them—if you consent to allow me the price I will immediately engage a sett of Moulders and drive on the Business with Spirit. We can make I believe from 3 to 9 lbs perhaps 12 pounders.

I would be much obliged for your answer by the return of the Morristown post.⁵

On November 14, 1776, Joseph Hoff wrote to General Knox, then in charge of the artillery of the American army, that there were thirty-five tons of shot at Hibernia Furnace. A little later he wrote that this furnace was, as far as he knew, the only one in blast—a statement which was erroneous.

Towards the latter part of 1776, due to the stringent measures adopted by the Continental Congress, salt became very scarce and practically unobtainable. As indicating this condition the letter which Joseph Hoff addressed to the Committee of Safety of Philadelphia is worth quoting:

Hibernia Furnace, New Jersey, }
21st Novem^r, 1776. }

Gentlemen:

The above works are now employ'd in makeing Canon, large Round Shott, Grape Shott, &c., for the publick service, and 'tis expected the Works will continue in Blast 'till late in January, but as it is now the time to lay in a stock of provisions, and I have no Salt to cure it with, I must beg that you will be pleas'd to send me 30 bushels by the bearer, Mr. Henry Howell, or to whom he may order the same, otherwise I must immediately putt the Works out of Blast & cannot compleat the orders I have rec^d, which I presume will be very prejudicial to the Interest of this Country, as at this time I know of no other Fur-

⁵ Tuttle Papers, p. 306.

New Jersey Forges and Furnaces

nace in this Province in Blast, or that the stores of Ordnance can be Supply'd. My Great want of the above Article does not leave me time to apply to the Quarter Master Gen.¹ for a proper Letter to you on the subject.

I am, with much respect, Gentⁿ,
Your most h'ble Serv^t,

JOS. HOFF, Manager of the above Works.⁶

No direct action appears to have been taken by the Committee, but a few days later the salt in the hands of the Council was distributed to the various counties and, no doubt, Hoff got his needs from the Philadelphia Committee.

Charles Hoff, Jr., who succeeded his brother Joseph as manager in 1777, had been apprenticed to Lord Sterling, August 12, 1774, "to learn the art, trade and mystery of iron making and book-keeping."⁷ He remained at Hibernia until 1781, when he moved to Mount Pleasant, where he died in 1811, at the age of fifty-five. Swank says that Lord Sterling, early in 1777, leased the Hibernia Works to John Jacob Faesch of Mount Hope Furnace,⁸ but a careful examination of the Hoff correspondence in the Washington Headquarters at Morristown, New Jersey, shows that, while they were closely associated, each furnace operated independently, and that Lord Sterling owned and operated Hibernia as late as 1778.

Hoff, in a letter to Governor Livingston, dated July 27, 1777, says Hibernia made one hundred and twenty tons of shot of different kinds for the Continental Army in 1776; also that he had ready for trial, "4 or 5 cannon of 8-pounders and are of the opinion they will prove good." He says "pig-metal" sold for twelve to thirty pounds a ton, although the maximum price fixed by the legislature was only twenty pounds per ton, and that there was a great demand for hollow-ware of all kinds, also salt pans, forge plates, etc. In another letter he says "I find hollow-ware would be in great demand there; would fetch almost any price."

In 1778 George Taylor of Durham Furnace visited Hibernia, and Hoff in conjunction with Mr. Faesch bought from him a large assortment of moulds for shot, pans, kettles, stoves, and "moulds of every other kind." For these he paid £200.

The next notice of this furnace is an interesting one, since it

⁶ *Pennsylvania Archives*, First Series, V, 72.

⁷ This quaint indenture is quoted in full in the *Proceedings of the New Jersey Historical Society*, New Series, VIII, 23. The same citation contains much other information about Hibernia.

⁸ J. M. Swank, *Iron in all Ages*, p. 116.

Hibernia Furnace

connects it with one of the most prominent of the Pennsylvania ironmasters, Mark Bird. This notice, which appeared in the *New Jersey Gazette*, January 16, 1782, reads as follows:

WANTED IMMEDIATELY

AT HIBERNIA FURNACE

A number of WOOD-CUTTERS, who will
meet with great encouragement

by

MARK BIRD

GEORGE ROSS.

Mark Bird was heavily interested in furnaces and forges in Pennsylvania, following his father in the management of iron-works in Berks County. He occupied a very prominent place in local affairs during the Revolution, was an officer of the Pennsylvania militia, and a Deputy Quartermaster to receive the levy made by Congress, September 17, 1778, for one million dollars for the army. In this resolution he is mentioned as "Col. Bird of Reading."

Mark Bird married Mary Ross, daughter of Rev. George Ross of Delaware, and his brother-in-law, George, was a "Signer." (See Bloomsbury Forge.) The George Ross⁹ mentioned in the above advertisement was, however, not the brother-in-law of Mark Bird, but was a prominent citizen of Elizabethtown; a member of the Elizabethtown Committee of Correspondence, 1774-1777, and an officer in the "Jersey Line." He was the son of George Ross and the grandson of George Ross, who came from New Haven about 1670. Ross' name appears on the assessors' lists for the years from 1783 to 1785 inclusive, several years after George Ross, the "Signer," died.

Exactly what Bird's connection with the Hibernia Furnace was is not clear. From the above quoted advertisement it would appear that he was a partner, but the title to the property was in the name of George Ross from 1782 to 1785, and during no part of this time is Bird even assessed as a "householder." The connection of both of these men, however, ceased before 1786, as indicated by the tax list for that year, wherein John Stotesbury & Co.,¹⁰ are assessed as the owners of the furnace, and further by the following letter from Stotesbury to Richard Backhouse:

⁹ See Chelsea Forge and Johnson's Furnace for other mention of George Ross.

¹⁰ This company consisted of John Stotesbury and John Murray.

New Jersey Forges and Furnaces

Hibernia, August 28th, 1786.

Dear Sir:—

From experience of your goodness to me & the many obligations I am under to you & the pleasure you have taken in promoting me, make me to beg another favor. Henry Sneider informs me you will allow any molder to take off your patterns. The bearer of this is Richard Arnold who will oblige me in any thing of this sort as they well know my metal is far Preferable & will sell much sooner. I expected to be down and see you before this time but cannot leave home as I cannot get any person that is worth one farthing. Mrs. Stotesbury and her Sister Presents their compliments to you, Mrs. Backhouse and family and expect the same from

Dear Sir

Your Humble Servant

JOHN STOTESBURY.

The story of the life of Lord Sterling (William Alexander) has been told so often that little need be said here. He was the son of James Alexander, Surveyor General of New Jersey and one of the most prominent lawyers in the Colony, as evidenced by his part in the so-called Elizabethtown Bill in Chancery. This was a suit of ejectment brought by the Proprietors of East Jersey against a number of settlers about Elizabethtown, who claimed title under grants from Governor Nicoll, and refused to acknowledge the rights of the Proprietors. Lord Sterling, from the outset of the struggle for independence, took an active part on behalf of the Colonies, and on joining the army obtained from the Assembly of New Jersey an act vesting the greater part of his estate in Commissioners, to sell such portions as might be required to pay his debts, and to administer the residue for his benefit. Just prior to the war it was estimated that his estate was worth over £100,000. In carrying out this trust, the commissioners sold the bulk of his real estate, receiving in payment Continental money, which by the repeal of the legal tender proviso was practically valueless. Thus, both the estate and the purchase money were lost, and even what property was left, being within the British lines, was seized and sold for the benefit of creditors who could not qualify under previous settlements, as they were within the enemy's territory. At his death, which occurred January 15, 1783, he left nothing but "the certificates issued by the State of New Jersey for the depreciation of his pay."

From 1785 to 1792 we find Benjamin Thompson, John Murray or Murray Samson & Co., John Stotesbury, and Lemuel

Hibernia Furnace

Cobb mentioned in connection with the various tracts of land connected with or around the Hibernia Iron Works. These connections were in some cases probably merely to complete title as a result of Lord Sterling's financial difficulties and his inability to carry out certain purchases of land from the Board of Proprietors of East Jersey.

According to the list of ratables for Pequannock township from 1786 to 1796, John Stotesbury was then connected with the Hibernia Company. The tax assessment for the year 1794 amounted to £4/7/4. This furnace disappears from the tax bills after 1795; Stotesbury failed in 1798.

The next owner of the furnace property appears to have been Dr. Charles M. Graham of New York, who rebuilt the plant and then turned it over to Samuel and Peter Thompson and William Spencer. This deed is dated Jan. 1, 1815. Owing to the "hard times," the furnace went out of blast and the mortgage given to Graham at the time of its purchase was foreclosed. In 1821, Graham, who had in the meantime sold off many lots, transferred the balance to William Scott, who built a forge near the furnace dam, which he named Hibernia Forge. It was operated for probably ten or twelve years, when a freshet swept away part of the dam and the forge was then allowed to go into decay.

The chief product of Hibernia Furnace was pig iron, for which it had a high reputation, and with which it supplied many of the forges in Morris County. One of these "pigs" is in the Washington Headquarters at Morristown and is thirty inches in length and about four inches in breadth and height, with the name HIBERNIA cast on one side.

JACKSON'S FORGE AND DOVER FURNACE OR IRON WORKS

Morris County

THE first forge erected in Randolph township, Morris County, was located by John Jackson on a small stream called Jackson Brook, about a half mile west of the central part of the present town of Dover. It was a small venture which did not prove profitable and was sold on August 15, 1753, by Sheriff John Ford to satisfy certain judgments which had been obtained by the executors of the estate of Edward Fitz Randolph, against the owner.

During the operation of the forge by John Jackson, Moses Hurd, the ancestor of the Hurd family in this vicinity, was his foreman. The ore for the forge came from the Succasunna or Dickerson Mine, about two miles northwest of the works. The next forge owner at Dover was Josiah Beman, brother of David Beman of White Meadow Forge. The writer has not been able to learn whether his forge was the old Jackson Forge or a new one. In either event, the new owner was also unable to make a financial success of the works and was compelled in 1769 to give a mortgage to Thomas Bartow, covering land described as "being that which John Jackson formerly lived on and whereon the forge and dwelling house which was his did stand." Beman carried on this forge until 1792, when he sold it to Israel Canfield and Jacob Losey, trading as Canfield and Losey or Canfield & Co. They soon enlarged the works, adding a slitting mill for cutting nail rods, and building a furnace. Dover Furnace, as it was called, became one of the largest in the state. According to a writer in the *Proceedings of New Jersey Historical Society*, the town of Dover received its present name between 1790 and 1796. It was first called Old Tye, then Beamans and finally Dover.

There were several other land transfers in and around Dover which had to do either directly or indirectly with the Dover Forges. In 1740, William Schooley of Schooley's Mountains purchased 600 acres of the Kirkbride Survey, which lay along the Rockaway above Dover, and Robert, his son, soon built a gristmill on this property. The same water power was used to provide power for a

Jackson's Forge and Dover Furnace

four-fire forge, called "Quaker Iron Works," which he built a few years later. On February 18, 1768, Joseph Jackson and his son Stephen purchased one fire of the forge commonly known as "Schooley's Forge" and one quarter of the land belonging to it. This was on the northeast side of the Rockaway River. The next year Joseph Jackson, described as "yeoman," conveyed his interest in the forge to his son Stephen, who is called in the deed a "bloomer." Stephen Jackson learned his trade under Josiah Beaman along with Andrew King, who was Colonel Ford's forgerman at Mount Pleasant.

James P. Losey and William De Hart on November 1, 1774, conveyed to John Jacob Faisch "All One fourth part or Quarter of an Iron Works Coal House and Saw Mill Standing on Rockaway river Called by the Name of Buckshire Forge together with the Use of One fourth part of the Dwelling House also all the Tools to the Same belonging with the privilege of going all times a Year untill the twenty Ninth day of February which will be in the year of our Lord one thousand and Seven Hundred and Eighty, and Six Months in a Year after the last above date to wit from the first day of October to the first day of April Yearly and Every Year as long as he the said John Jacob Faish his heirs and Assigns Shall have Occasion for the Same for the Making of Iron and Sawing timber."¹ It was the same premises which had been the property of Isaac Vanduyn and the said Losey and Hart, but the author has not been able to further either identify the Buckshire Forge, or the other owners of the forge.

The firm of Canfield and Losey failed in 1816, following the depression after the War of 1812. Henry McFarlan and Joseph Blackwell, New York merchants, who were heavy creditors of Canfield & Losey, now became the owners and made further extensions. In 1822, they erected a rolling mill, the second in the state, reconditioned the furnace and revived the forges. Blackwell retired from the firm early in 1830, and Daniel Ayres became McFarlan's partner.

The following newspaper advertisements present a vivid picture of conditions as they existed around the Dover Furnace and of the products which these works made:

DOVER WORKS—The undersigned, proprietors of the Dover Iron Works, in Morris county, N. J., offer for sale Lots in the village adjoining the Works which they have recently

¹ S.S.O. *Deed Book AL*, p. 289.

New Jersey Forges and Furnaces

had surveyed and formed into streets running at right angles from 65 to 75 feet wide.

Since the Sale of Lots at Auction, on the 25th ult. several houses have been commenced on the Lots purchased at that time, and from the singularly favorable location of the village, having the canal passing through its center—the turnpike roads from New York by way of Morris-Town, also Hanover and Bloomfield, pass through Dover branching off north to Sparta and Hamburgh, and west to Stanhope and Newton, present inducements of great consideration to Mechanics, Merchants, and all others who are disposed to become purchasers. Upon the completion of the Canal, Lehigh Coal will be brought to the village at a very cheap rate, and the communication to the New York Market being opened, the great and important advantages which will result therefrom are sufficiently evident. The Iron Works are now in full operation, consisting of three Rolling Mills, and two Chain Cable shops; within a few miles of the village there is also near 100 forge fires in operation.

Any person wishing to purchase lots may know the price and terms of payment by inquiring of JACOB LOSEY, Dover, or at New York, of BLACKWELL & McFARLAN

The Jerseyman, September 12, 1827

Cut nails, shovels, &c. Cut nails of all sizes and spikes in whole and half casks. Shovels, backstrapt for canaling and Farmers made from the best Old Sable Iron by hammering, not rolled, faced with German Steel, handles double riveted. Rolled Iron, the best quality of all widths & thicknesses.

Ditto inferior at reduced prices. Horse-nail Rods made from Old Sable & Livingston Iron.

Castings of all kinds made to order at this place from the best quality of Scotch & American Pig Iron.

All the above articles are made by the Subscribers and warranted of the best quality for sale at reduced prices for cash or Bar Iron. Also Cast, German & English Steel, Best Quality. Enquire at this place of Jacob Losey or of the Subscribers.

McFarlan & Ayres
Late Blackwell & McFarlan

Dover May 10, 1830

The Jerseyman, August 14, 1830.

The McFarlan family retained title to the Dover Furnace and continued its operation until 1880. From 1835–1868, Guy Maxwell Hinchman was superintendent of the works. In 1880, the new Dover Iron Works was established and began its career.

JOHNSTON'S FURNACE OR IRON WORKS AND BLOOMSBURY FORGE

Sussex County

now

Warren County

THESE two works are treated together in the belief that the latter was the successor of the former. The furnace, which was located on the north bank of the Musconetcong Creek in that part of Bloomsbury which is now in Warren County, was built by Samuel Johnston¹ in 1753. It was a charcoal furnace, using ore taken from the south side of the Musconetcong Mountain. In the *New York Mercury*, August 22, 1757, there is a notice of a 750-acre tract of land, part in Hunterdon County and part in Morris County, offered for sale. The land, which was "divided by a run called Spruce-Run (which run turns the Union-Iron-Works)," was described as "about 8 miles from said works, about the same distance from Johnson's [Johnston's] furnace, and about 12 miles from "Robinson's Works."²

The ironworks was offered for sale or rent by Samuel Johnston of Kingwood, and was described in the *New York Mercury*, November 23, 1761, as a well-built furnace, almost new, with coal houses and all the necessary buildings, together with about 3000 acres of extremely well-timbered land. The iron mines from which the furnace obtained its supply of ore was in the center of this tract and less than a quarter of a mile from the works. It was said that the pig iron made from this ore was equal to any in America for making bar iron. There was also another iron mine about eight miles from the furnace "which had been tried, proves rich and easy melted, and makes choice bar iron." In this property Johnston had a one-quarter interest. A three-fire forge, lately rebuilt, situ-

¹ This name is spelled both "Johnston" and "Johnson" in the records and advertisements.

² This is no doubt Robeson's Oxford Furnace.

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ated on the south branch of the Raritan River, and about 1000 acres of good woodland was also offered for sale.

Two other tracts, one of 1000 acres and the other of 1500 acres, situated on the Musconetcong River, were also offered for sale or rent. It was stated that on each of these "there is a conveniency for building a forge within 8 miles of 3 furnaces, both tracts well timbered." The three furnaces here mentioned were, no doubt, the Union, the Oxford, and the Johnston Furnaces.

In August, 1764, mention is made of "Mr. Johnson's [Johnston's] Iron Works in Hunterdon County, West-Jersey" in connection with a certain David M'Afee who had "run away from his Bail." While this does not prove that the works were actually in operation at the time, it does indicate that the furnace was a landmark in the neighborhood.

Swank says the furnace was operated until 1765 or 1766. The writer has been unable to locate any facts concerning the forge situated on the south branch of the Raritan.

The Bloomsbury Forge was located on the Musconetcong Creek, at Bloomsbury, New Jersey, about seven and one-half miles from its mouth. Of this forge, no earlier definite records are available than the account books of the Durham Iron Works, now in the library of the Bucks County Historical Society.³ It is quite likely that this was built on the site of the old Johnston Furnace, which had been abandoned in 1765 or 1766.

The first entry in these books bears date, January 8, 1781, and is for a delivery of one ton of bar iron containing eighty bars, and is signed by George Ross.⁴ Then follow orders and receipts for "pig-metal" delivered to "Geo. Ross, Bloomsbury Forge," up to 1784, when the name of Robert Johnston is met. An entry in these books, under date of April 25, 1787, charges Robert Johnston with twelve bars of pig iron at £8 per ton and credits him with bar iron at £28 per ton. He continued to operate the forge until 1799.

The next notice of this forge is found in the advertisement of a sale by Charles Pemberton, sheriff of Sussex County, of "that VALUABLE and well known forge, called JOHNSTON'S FORGE, with one acre of land, be the same more or less, lying and being on the waters of Musconetcong river, and now in possession of William Johnston; all taken by execution as the property of Robert

³ Abstracted by Dr. B. F. Fackenthal, Jr.

⁴ See Hibernia Furnace and Chelsea Forge for other mention of a George Ross.

Johnston's Furnace and Bloomsbury Forge

Johnston." The public vendue was to take place on November 8, 1799.⁵

Gordon does not mention the forge as in existence in 1834, from which it must be inferred that it had been abandoned before that time.

⁵ *Trenton Federalist*, October 21, 1799.

JOHNSTON'S IRON WORKS
OR
HORSE POUND FORGE
OR
BEACH GLEN BLOOMERY

Morris County

IN 1751 John Johnston bought from the Proprietors of East Jersey a tract of land at the Falls on what was afterwards called the Beach Glen Brook, and built a forge about a mile and a half below Hibernia, which was known for many years as "Johnston's Iron Works," or as "Horse Pound Forge." John Johnston operated this forge from 1753 to 1765, and during this period frequent mention is made of it in deeds for adjacent lands. It was sold to Job Allen, and by him to Benjamin Beach and Henry Tuttle on December 30, 1771. Shortly after this, Beach bought out his partner, and in 1794 took his son, Benjamin Beach, Jr., into partnership. At this time, according to the tax list of Pequannock township, the forge consisted of two fires. From Benjamin Beach, Jr., the forge descended to his two sons, Chilion and Samuel Searing Beach. It remained in the Beach family and was operated by them until a freshet in 1867 washed out the dam. In 1850, Dr. Columbus Beach was the proprietor.

KINGWOOD FORGES

Hunterdon County

THE beginnings and activities of the Kingwood Forges on Lockatong Creek are somewhat misty. Snell says "Charles Hoff had a forge in front of the tavern at Pittstown before the Revolution, traces of which may still be seen."¹ Hoff had a store in Pittstown as early as 1758, and at that time the place was called "Hoffs." The first notice of this forge that has been found is contained in an advertisement which appeared in the *Pennsylvania Gazette*, August 12, 1762, over the signature of Charles Hoff, Jun., offering for sale a forge "for refining Pig Metal into Bar Iron," which contained two fires together with seventy to 100 acres of land in the Great Swamp section of Hunterdon County.² It had a capacity of turning out fifty tons of bar iron yearly. He said that all the wood necessary to make charcoal could be obtained "gratis" from the Great Swamp.

Before any sale was consummated, however, all of the properties of Charles Hoff, Jr., were offered for sale by Samuel Tucker, sheriff of Hunterdon County, to satisfy a suit of John Mease, Ann Pidgeon, Andrew Reed, and Charles Pettit. The forge property is described as "containing 51 Acres and a Half and 33 Perches, on which is an Iron Works for making Bar-iron, with Coal-Houses, and Houses for Workmen to dwell in, situated near a large Tract of Land called The Great Swamp."³ Andrew Reed and Charles Pettit evidently bought a number of the properties. Three years later they offered six parcels of land for sale, among which was "A forge with two fire places, on a good stream, . . . with convenient houses for the workmen, a good large coal house and 52 acres of land."

In 1773, there was one forge fire assessed in Kingwood township, but the following year no mention of any forges is made in

¹ J. P. Snell, *History of Hunterdon and Somerset Counties*, p. 442.

² This Great Swamp, more often called the Great Meadows, covering an area of about fifty square miles, is a flat tableland in the upper part of Kingwood township and extends into Alexandria township. It is not a bog formation, but takes its name from the fact that because the land is so level, at certain seasons of the year the water lies on the surface.

³ *Pennsylvania Gazette*, July 19, 1764.

New Jersey Forges and Furnaces

the tax duplicates. After this, all traces of the plant are lost, unless the following advertisement, which appeared in 1779, refers to it:

Also may be had in exchange for bar iron, a pair of forge bellows, a little out of repair, and a pair of spare bellows pipes, hammer wheel gudgeons, and some other of the iron works belonging to a forge.

New Jersey Gazette, May 5, 1779

The fact that it was offered by Charles Coxe of Sidney, Kingwood township, and James Paxton of Trenton leads to the belief that it was part of the old Kingwood forge.

Daniel Potts and James Dilworth operated a forge in Kingwood township in 1780, and this was probably the same forge which Daniel and William Potts owned on Capoolon (Cakapoulon) Creek some years later.

LISBON FORGE OR NEW LISBON FORGE

Burlington County

PETER BARD, father of Peter Bard of the Mount Holly Iron Works, between the years 1717 and 1723 obtained title to a very extensive tract of land in what is now about the center of the township of Pemberton. On January 9, 1730, he conveyed to Robert Mackdonal a one-half interest in the land, sawmills and "iron mills to be erected thereon." On the same day he sold to Thomas Shaw, a one-quarter interest in the same tract, repeating the recital about "the iron mills to be erected thereon." The remaining part he conveyed the following year to Mackdonal. This is the first mention of an ironworks in this section. F. W. Earl says: "I think the iron-mill was intended to be built on the Rancocas, at or near where New Lisbon now stands, a short distance above the junction of the two creeks."¹

On June 20, 1810, John Earl, Sr., William L. Earl, John Earl, Jr., Elizabeth Earl, and Mary Earl deeded to William Cook and Anthony S. Earl, as tenants in common, for a consideration of \$5000 a one-half interest in a five-acre tract of land on Rancocas Creek in Northampton township, together with "a one half part of the forge, mill dam, flood gates and water lanes, houses, etc.," and also "one half of the water necessary for running and working said forge with the privilege of ponding and flooding for carrying on said forge."² This is the first notice that has been located pertaining to Lisbon Forge. It is quite probable that John Earl, the elder, built the forge about 1800, soon after he had erected the sawmill at that place. The site of this old forge was on the south side of the creek west of the old road from New Lisbon to Cedar Bridge and opposite the spot where the sawmill formerly stood. In this locality may still be found pieces of slag and cinder scattered over the ground. On an old map made by William Sharp, Deputy Surveyor, the road from "Lisbon Forge to Mount Misery Mill" is shown. The earliest tax-assessment list for Northampton township in which Lisbon Forge is mentioned is that of 1813,

¹ *Proceedings of the Surveyors' Association of West New Jersey*, p. 107.

² *Burlington County Deeds*, Book V, p. 204 ff.

New Jersey Forges and Furnaces

wherein William L. Earl & Co. are charged with a forge of two fires. Two years later the William Cook and Anthony S. Earl moiety was sold to William L. Earl. The property subsequently passed to Benjamin Jones.

This forge is mentioned in connection with a deed from Charles Corey to Benjamin Jones, dated February 16, 1827, for a tract of land "at the edge of the Lisbon Forge Pond." Jones sold the tract of Eayre Oliphant, and in this deed, which is dated August 25, 1831, there is no mention made of a forge, but "Lisbon Mills" is specifically included. It would appear that the forge was abandoned some time between 1825 and 1831 and the water power used to operate a gristmill. In 1846, an agreement was made with the Burlington County Board of Freeholders to supply the County Poor House with water, the miller being charged with the maintenance and service of the pumps.

Much of the wood used by the engines of the old Camden and Amboy Railroad was cut in this vicinity. A tramway was built between New Lisbon and a station on the Camden and Amboy Railroad, now called Kinkora, on which the cars were drawn by mule teams.

LITTLE FALLS FORGE OR GRAY'S IRON WORKS

Essex County

now

Passaic County

IN 1765, Major James Gray purchased from John Low a farm of 300 acres situated on the Passaic River at Little Falls, about four miles above the present city of Paterson. He soon built a forge, which, according to an advertisement in the *New York Journal*, January 3, 1771, consisted of three fires and one hammer. Besides the forge there was a gristmill and a sawmill, all situated on a plantation of 260 acres. Whether Gray foresaw the pending conflict between England and America is not known, but he evidently was determined to get rid of his realty holdings either by a sale or long-time lease.

The ore for this forge was carted from Ringwood and Charlotteburg mines on horseback. To provide sufficient water power, Gray built a dam across the Passaic River, which caused much damage to other property owners, and the Legislature, in 1773, ordered him to reduce its height.

At the beginning of the Revolution, he became active in the British cause and was authorized by high government officials to enlist a thousand men to fight the Continental troops. This plan was defeated through the arrival of General Schuyler and a large force of Americans. Gray was arrested and sent to Albany. A year later he escaped to Canada and fought on the English side throughout the war. His property was seized under the "Confiscation and Forfeiture Act," but in the sale no mention is made of the ironworks, from which it may be inferred that he had previously sold the forge, or had abandoned it. In any event, there does not appear to be any record of its activities after the war was over.

LOWER OR MARTHA OR PHOENIX FORGE

Monmouth County

now

Ocean County

ON A tract of land some distance below Horicon Lake and a short distance east of the present village of Lakehurst in Ocean County was a forge called Lower Forge or Martha Forge. The original plant was destroyed by fire about 1816 or 1817, and when rebuilt it was named Phoenix Forge or Phoenix Furnace.¹

It is generally stated that these works were built by Griffith Jones and Mercer Wood, but from some early records it is now uncertain as to who established this plant. In a deed dated August 24, 1815,² John Clark of Philadelphia conveyed to Griffith Jones and John Holmes, among the other tracts, "all that other forge called the Martha or Lower Forge and the land thereto belonging." In October of the same year Holmes sold his interest to Griffith Jones. In 1817, Charles Parker, sheriff, sold to Anthony Ivins "All that Certain forge, lately called Martha or Lower forge, now Called the Phoenix forge and Lott or piece of Land Situated on both sides of Horicon brook in the County af-sd," for a consideration of eighty-three dollars.³ Ivins evidently was acting for Jones in this transaction, because during the following year Sheriff John J. Ely again sold the property as an asset of Griffith Jones, the purchaser being William Williams. During the next fifteen years there is a break in the records. In a deed from B. B. Howell to his sons, Henry W. and Lewis Howell, dated April 10, 1834, sixty-four acres of land at Phoenix Forge are conveyed.⁴ The Howells operated this works in connection with Federal or Dover Furnace, but both went out of the family about the same time. On Horner's *Map of New Jersey* (1855) it is marked "in ruins." The site of the old forge is still well marked by a sheeting and dam both in a fair state of preservation.

¹ It is mentioned by the latter name in T. F. Gordon's *Gazetteer of New Jersey*, p. 181, and shown as such on a map made in 1828.

² *Monmouth County Deeds*, Book Y, p. 608.

³ *Ibid.*, Book A2, p. 195.

⁴ *Ocean County Deeds*, Book 4, p. 224; *Monmouth County Deeds*, Book F3, p. 403.

MARTHA FURNACE

Burlington County

MARTHA FURNACE was located on Oswego, or east branch of Wading River, eight miles south of Speedwell at the foot of Oswego Pond and just above the Harrisville Pond. It was built by Isaac Potts,¹ who is described in an old deed as an "Iron Master" of Upper Merion township, Montgomery County, Pennsylvania.

In an account book of Isaac Potts, according to the *Memorial of Thomas Potts, Jr.*, by Mrs. Thomas Potts James, is recorded the following entry:

9 mo. 29. 10 o'clock A. M. Martha Furnace went in Blast made the first Casting 30th at 3 o'clock in the morning 1793.

Then follow different blasts until 1797. Thus we can definitely fix the date of the establishment of this furnace. In the tax duplicate for Little Egg Harbor township in 1797, Isaac Potts is assessed for 2000 acres of unimproved land and a furnace.

The furnace was named, as was common custom, after his wife, Martha. On some old maps, the location is marked Martha-Calico, a combination of the name of the furnace and the village near by, where the workmen lived.

How long Potts lived at Martha Furnace, if at all, is not known, but in 1797 he was living on Arch Street, between Sixth and Seventh Streets, Philadelphia.

In 1798 Isaac Potts and his wife conveyed to George Garrit Ashbridge, Charles Shoemaker, John Paul, and Morris Robeson,² the

¹ Isaac Potts & Co. were important iron factors in Philadelphia, and are mentioned in the *Durham Furnace Papers* as of Green Lane Furnace (Forge) in 1783 and as large buyers of pig iron from the same furnace during 1785-1786. Isaac Potts (b. 1750, d. 1803) operated a sawmill at Valley Forge from 1768 until near the close of the century and, at one time, lived in the old house which Washington used as his headquarters during the memorable encampment at that place. Isaac's interest in the ironworks at Valley Forge did not begin until after the Revolution, and then related to a new forge. The gristmill was operated by Isaac Potts & Co., the firm consisting of Isaac and David and the latter's son James, near the old Valley Forge house. There was a close family relationship between Isaac Potts and the Pauls, who later became interested in Martha Furnace. Mary Bolton, the sister of Mrs. Isaac Potts, married Jacob Paul, and the John and Joseph M. Paul mentioned were sons of this marriage.

² George Garrit Ashbridge was a member of the firm of George and William Ashbridge, who were in 1800 located at Crooked Billet Wharf in Philadelphia.

New Jersey Forges and Furnaces

Oswego Saw Mill Tract, which he had bought for £2250 in 1793 from Samuel Hough and the executors of William Newbold, together with other lands adjacent, which he had purchased from John and Francis Bodine, in 1794, and also a large tract of land which he had bought from the executors of Daniel Ellis in 1797.

In this conveyance mention is made of "forges, furnaces, ores, mines, and minerals of all kinds," and the Martha Furnace is specifically named. There also appears the following specific conveyance and reservation, which was quite common in this part of Burlington County in the days of the bog-ore furnaces:

ALL THE ORE that now is or hereafter may be in or upon the above mentioned and described tract of four hundred and forty two Acres or thereabouts reserved by metes and bounds as aforesaid with liberty of Ingress, Egress and Regress as well for the purpose of digging for and taking away the Ore as for the purpose of passage in and upon and the same tract with or without Horses Carts Waggons Carriages to all or any part or parts of the land above mentioned and described—the right of soil to the said Tract of four hundred and forty two Acres or thereabouts being under these Restrictions reserved to the said Isaac Potts his Heirs and Assigns for Ever.³

In another deed, dated November 29, 1800, Isaac Potts and wife conveyed four other tracts of land lying on Great Harbor River to Ashbridge, Shoemaker, Paul, and Robeson. From this deed, we learn that Ashbridge and Shoemaker each had a third interest and that the other third part was held by Paul and Robeson as "tenants in common." In 1801, Ashbridge and Shoemaker sold to Joseph M. Paul, a one-sixth interest in the property, one-twelfth from the share of each, for four thousand dollars. This agreement specifically includes a one-sixth interest in Martha Furnace, erected on the

Charles Shoemaker was a brother-in-law of John Paul and was later interested in Weymouth Furnace.

John Paul was at this time associated with his brother, Joseph M., and Morris Robeson in business at 53 North Water Street, Philadelphia. A few years later he was interested in the sawmill and woolen factory at Eayertown N. J., which he offered for sale in 1821.

Morris Robeson was the grandson of Jonathan Robeson, founder of Oxford Furnace. He became a member of the firm of Paul Bros., later changed to Paul, Robeson, and Paul, and in 1789 married Tacy Paul, a sister of his partners. At one time he had a summer home near Salem, New Jersey, which he sold in 1808, after he had disposed of his interest in Weymouth Furnace to Samuel Richards. The following year he bought the Oxford Furnace property, living in the old house in the summer and later making it his permanent residence, and operating the ironworks which had been established by his grandfather. During the next fourteen years he took an active part in the civil affairs of Sussex County and died at Oxford in 1823.

³ Deed in library of Camden County Historical Society.

Martha Furnace

property, and "of all the Forges, Furnaces and Ore." After these transfers the furnace was operated by The Martha Furnace Company,⁴ in which Ashbridge, Shoemaker, Robeson, and the Pauls were interested.

According to advertisements in the *Trenton Federalist* for October 21 and November 11, 1805, Martha Furnace was to be offered for sale at the Merchant's Coffee House, Philadelphia, first on November 10th and later on November 16th. The property was described as containing 15,000 acres of land on which was erected a blast furnace, "as large and substantial as any in the state, in good repair, and noted for the soft and good quality of the iron and abundant yield." There was also a gristmill, stamping mill and all the necessary buildings and houses. The land was well timbered and there were "a number of Ore Beds containing Ore sufficient to consume all the Wood." It was said that the cost of transporting the pig iron to either the New York or Philadelphia markets was \$2.50 per ton.

This advertisement also stated that there was "on the same stream, about a mile below, a Forge and Slitting Mill" (Wading River Forge), "which will also afford a Market for Pig Iron—and there is another new Forge" (Westecunk Forge) "twelve miles, to which this Furnace is nearest." Robeson and Paul, 53 N. Water Street, Philadelphia, were the owners at that time, and Jesse Evans the manager at the works.

From the tax duplicates for 1806, we learn that Jesse Evans was assessed for this plant, and two years later Samuel Richards & Co. appear as the owners, and were assessed for 120 acres of improved land, valued at four dollars per hundred acres, 3380 acres of unimproved land, valued at two dollars per hundred acres, one sawmill, one gristmill and one furnace, and paid a tax of \$7.24.

Jesse Evans was a man of some prominence in old Washington township, being a justice of peace, a member of the township committee, judge of election, assessor, and chosen freeholder. His wife, Lucy Ann Evans, was a prominent member of the Little Egg Harbor Meeting of Friends. When the separation took place in the Friends' Society, she affiliated with the Hicksite Meeting at Bridgeport. So faithful was she in attendance at meeting that when the members moved to other sections, leaving her the sole member, she still went regularly to the meeting at the customary hour of worship and was the sole minister and the entire congregation.

⁴ *Tax Duplicates* of Little Egg Harbor township in the Public Record Office Trenton, N. J.

New Jersey Forges and Furnaces

Recently a diary kept at Martha Furnace from 1808 to 1815 has come to light and furnishes much information about these works, hitherto unknown. The authorship of this record is uncertain, but it is probably from the pen of Caleb Earle, who was clerk at the furnace for many years and was succeeded by Isaac Hemingway. The diary begins with the following entry:

March, 1808, Thursday, 31st. Finished taking the Inventory of the personal property of Martha Furnace, when Mr. Evans accompanied Charles Shoemaker, George Ashbridge and Samuel Richards to Weymouth, in order to take an Inventory and appraisement of the property there.

Charles Shoemaker, Morris Robeson, and the Pauls on April 6, 1808,⁵ conveyed a three-quarter interest in the Martha Furnace Tract to Joseph Ball and Samuel Richards, so that the above inventory was no doubt made in anticipation of this purchase. The one-quarter interest of George Ashbridge was not conveyed by his heirs to Samuel Richards until May 17, 1829. Frequent mention is now made of the visits of Samuel and William Richards and Joseph Ball, for the purpose of taking inventories, or supervising and directing the policies to be pursued. From this diary we get an intimate view of the life at these isolated plants and some idea of the difficulties with which the managers had to contend. That there was a close affiliation between the furnaces and forges in South Jersey is also quite evident. In the *Martha Furnace Diary* mention is made of sales of "scrap" to the forge and slitting mill, no doubt the Union Works on Wading River; of visits to Hampton Furnace, Speedwell, Atsion, Weymouth, Batsto and Westecunk Forges; and of patterns brought from "The Federal."

Training days, which occurred three or four times a year, when every male citizen over eighteen years was required to report for military drilling, were occasions of a general exodus of the workmen to the nearest rendezvous. It took several days for the men to get over these periods of jollification, and in the meantime the furnace had to be operated short handed. These training days were not taken seriously either by the men or their officers even during the period of the War of 1812. One incident is cited in the *Martha Furnace Diary* where an officer was so drunk he did not know the duties of a Captain. Some of the comments about this situation are as follows:

⁵ *Burlington County Deeds*, Book T, p. 676.

Martha Furnace

June 10, 1808—Training at Bodine's was very fully attended from ye works. Most of the hands about the bank ret'd. orderly.

May 8, 1809—Training at French's Bass River.

June 9, 1809—Training at Bodine's.

May 25, 1810—Training at Bass River. Most of the hands off.

April 20, 1812—Men chiefly at training at Bodine's.

April 21, 1812—Thomas Anderson not returned from training. John Cramer returned about 11 o'clock in forenoon.

April 19, 1813—Military exercises at Bodine's. Hands chiefly there.

July 15, 1813—Capt. Joseph Townsend made a draft of the militia at Sooy's.

There are entries of men leaving the work to join the Army and of rumors that peace had been declared between the United States and Great Britain, the confirmation of this report, however, not reaching the works until February 24, 1815.

An event such as a birth or marriage, a town meeting, or the discontinuing of burning charcoal in any particular section, was the occasion for a "jollification," which often kept the men away from work for several days. The following entry fully illustrates the trouble in this direction:

January 24, 1811—Roses Boys finished their Coaling. Had the finishing Jug. Emons drunk.

Drunken wagon drivers caused much damage to the property entrusted to their care and frequently hampered the proper operation of the furnace through delay in transporting ore or charcoal.

Among the curious notes in the *Martha Furnace Diary* are the following:

Sol Reeve idle. Went to Bodine's & got drunk and let Bodine whip him.

Jacob Emons went to the "Bucks" and got very drunk, and coming up stopped at meeting to get his sins forgiven him.

Several of the women and children went to Bodine's to see the learned Goat.

"The Bucks" was a favorite place for the workmen of Martha. In one place it is said "From the juice of the 'Bucks' keg, Joseph get intoxicated." Other taverns frequented by the Martha workmen were "Half Moon," Sooy's and Bodine's:

Bodine's Tavern was on the easterly side of the Wading River near where the old road from Washington to Tuckerton (Clamtown) crossed that stream. It was about two and one-half miles from Martha Furnace. The Sooy's Hotel here mentioned was not

New Jersey Forges and Furnaces

the one on Mullica River above Green Bank and long known by that name, but was the tavern at Washington which, at that time, was kept by Nicholas Sooy, father of Paul Sears Sooy whose place for many years was one of the principal stops for the stage coaches between Philadelphia and Tuckerton. Bucks Tavern was on the road leading from Martha Furnace to Shamong (now Chatsworth) where it crossed Bucks Run.

The furnace was usually put in blast about the middle of April and blown out in January. The latter operation on several occasions caused the diarist to enter the following comments:

Jan. 7, 1809—Blew the Furnace at 8 o'clock P. M. All hands drunk.

Dec. 18, 1811—Furnace went out of blast about 12 o'clock last night. All hands in high glee.

The diary has many interesting entries pertaining to the working of the furnace and the influence the weather plays in the manufacturing of iron. A few of these entries are as follows:

May 8, 1808—The Furnace made a considerable puff this day.

July 6, 1808—The Furnace wrought hard last 12 hours.

Jan. 4, 1809—Frost stopped furnace wheel several times.

June 6, 1809—Iron very high occasioned by stamped stuff.

July 30, 1809—Furnace boiled & metal consolidated in gutter.

Dec. 21, 1810—Rain. Furnace made very bad Iron owing to the wet weather.

Nov. 18, 1811—Furnace made a great Emission of ore and coal about 4 o'clock this afternoon.

July 20, 1812—Furnace made a great puff on Sunday night last, but fortunately did no damage.

Dec. 3, 1812—Furnace working bad owing to back water.

On June 2, 1813, the furnace and warehouse were destroyed by fire, but the former was immediately rebuilt and was put in blast within two months. The bricks for the stack were hauled from Speedwell, and bellows parts from Hampton and Atsion. The new furnace continued to be operated until 1845-1850. According to T. F. Gordon, *Gazetteer of New Jersey*,

The furnace makes about 750 tons of iron castings annually and employs about 60 hands, who with their families, make a population of near 400 souls, requiring from 40 to 50 dwellings; there are about 30,000 acres of land appurtenant to these works.

Martha Furnace

In 1822, the heirs of Joseph Ball, who died intestate, conveyed all their rights in the estate of Joseph Ball to Samuel Richards. How long after 1834, when T. F. Gordon's *Gazetteer of the State of New Jersey* was published, the above furnace continued in operation is not known. In 1841, Samuel Richards conveyed the Martha Furnace Tract to Jesse Evans, who seven years later sold it to William Allen and Francis French. Eventually it passed to Francis B. Chetwood.

After Martha Furnace had been abandoned, charcoal was manufactured on an extensive scale and found a ready sale in Philadelphia for domestic and industrial uses. This industry was continued until about 1848.

On the same stream a short distance below, a very extensive and substantial paper mill was subsequently erected, to make paper from hay and manila rope. It was located on a 300 acre tract just below the site of the old furnace. This enterprise was started in 1835 by a company known as The Wading River Manufacturing and Canal Company, of which William McCarty was the manager. Henry C. Carey and Isaac Lea of Philadelphia were among the stockholders. It was later owned and operated by William D. and Richard C. Harris, from whom the name Harrisville is derived. The paper mill was abandoned a number of years ago, but the ruins are still visible, the buildings having been destroyed by fire in 1914.

The products of Martha Furnace, according to the diary, consisted of pig iron and castings, such as hollow-ware, kettles, cannon wheels, shot, sash weights, "spiders," sugar kettles, nine-plate stoves, fire-back and fireplace jambs. Mention is also made of Capt. De Coste's special kettles and patent "cambosses" of George Youle.

Through the courtesy of Dr. W. W. Gardiner of Moorestown, N. J. the writer was recently presented with a piece of pig-iron cast at Martha Furnace which shows the crude methods used in these early furnaces. The mould in which it was made was formed by dragging the heel of a shoe or boot through the sand. It weighs about 50 pounds, measures 31 inches in length, and has a maximum width and thickness of three and one-half inches tapering to an inch at one end. Notwithstanding that this piece has lain out in the weather for more than ten years it does not show the least trace of corrosion or rust, a property peculiar to bog-ore iron.

MIDDLE OR AETNA (ETNA) FORGE

Morris County

MIDDLE FORGE, located on the Burnt Meadow Branch of the Rockaway River, below the Burnt Meadow Forge at Denmark, was built about 1749¹ by Jonathan Osborn, using water power from the falls midway between Denmark and Mt. Pleasant.

In 1757, Jacob Ford, Sr., secured among other lands fifty-eight acres of land which is described as on the road leading from "David Beman's to what is called the Middle Forge." It is also mentioned in connection with a tour made by a Committee of the Board of Proprietors of East Jersey in 1772.

Colonel Jacob Ford, Sr., conveyed it to Colonel Jacob Ford, Jr., in 1773. The younger Ford occupied a prominent position in the colonies. Early in the war, in consequence of an agreement made with the Committee of Safety, he erected a powder mill on the Whippany River above Morristown. It was financed partly by a loan from the Province. The Secret Committee of the Continental Congress delivered to Colonel Ford three tons of saltpeter, "to be by him manufactured into gun-powder for the use of the United Colonies, on the same terms as others have agreed to manufacture it."² He was elected Colonel of the Eastern Battalion of the Morris County Militia, January 13, 1776, and was detailed to cover the retreat of Washington's Army across New Jersey after the fall of New York. Later he saw service, not only at the Battle of Trenton, but also in his own county, where he was engaged in harassing the enemy and in preventing the people of Morris County from accepting the "protection" offered by the British authorities. As a result of exposure on this duty, he was taken with pneumonia and died January 11, 1777, eight days before his father, Jacob Ford, Sr., passed away. He was buried with military honors by orders of General Washington.

In 1778, the Middle Forge was conveyed by the executors of Jacob Ford, Jr., to John Jacob Faesch, who operated it together

¹ J. M. Swank, *Iron in All Ages*, p. 116. In the *New York Gazette and The Weekly Mercury*, July 18, 1774, mention is made of a forge in Morris County formerly built by Jonathan Osborn and called by the name of Middle Forge.

² *Journals of Congress*, II, 164.

Middle Forge

with Mount Hope Furnace until his death, May 21, 1799. The property was then sold to Moses Phillips, Jr., who built a new forge near the site of the old one and ran the plant as the Ætna Forge for many years. In 1839, it passed to Samuel F. Righter, who was operating it as late as 1850. In 1853, George E. Righter is given as the owner. It was finally bought by the Federal Government and used as the site of a powder magazine.

MONMOUTH FURNACE
AND
WILLIAMSBURG FORGE
OR
HOWELL WORKS

Monmouth County

THE old Monmouth Furnace, located on the north bank of the Manasquan River, about ten miles from Freehold, was erected shortly after the beginning of the nineteenth century, but the identity of the original builder, or builders, is unknown.¹ As is evidenced by some of the early deeds it was contemporary with the Williamsburg Forge, the site of which was on what was afterwards called the "Monmouth Furnace Tract."

It is contended by some writers that the Monmouth Furnace was started before the Revolutionary War, and that it was actively engaged in casting cannon balls for the Continental Army. There does not, however, appear to be any authority for this statement, and it seems quite unlikely that works of this character would have been allowed to operate in a country which was so thoroughly occupied by Loyalist troops and sympathizers.

The site of the Monmouth Furnace was originally occupied by a sawmill, erected by Isaac Palmer about 1750.² On August 10, 1810, William Griffith obtained title to a part of the original Palmer survey and also to tracts of land owned by Samuel Swain, Benjamin and Aaron Vanmeter,³ and to this soon added many additional acres. Griffith came from Burlington and at that time was operating a sawmill on Kettle Creek in Dover township. So far as is known, his purchases of these lands were entirely on account of the vast amount of woodland they contained.

Of the Williamsburg Forge, the first notice found is in a deed from Joseph Parker of Shrewsbury, dated April 20, 1812,⁴ where we learn that he was the owner

¹ See a paper "The Howell Iron Works and The Romance of Allaire," by Halsted H. Wainright, read before the Monmouth County Historical Society, September 30, 1925.

² *Ibid.*

³ *Monmouth County Deeds*, Book W, p. 518.

⁴ *Ibid.*, Book V, p. 185.

Monmouth Furnace

of one fourth part of the Forge called the Williams Burg Forge in the Township of Howell and county of Monmouth on Manasquan river, or of one fire of the said Forge and prevelidges of the Scite and Waters thereto Belonging and is also seized of Six fourteenths of the forty acres of Land belonging and Appertaining to the said Williamsburg Forge conveyed by Ezekiel Fielder to Jacob Corlies by deed dated the 27th of February 1793 the same into fourteen equal Parts to be divided.

In another deed dated November 23, 1813,⁵ we find that other owners of the Williamsburg Forge were Jacob Coles, Henry Wardell, John Wardell, John Polhemus, and James Allen. All of these portions came to William Griffith, who, on the last named date, sold "a one-third interest in the lands, mills, mines, minerals, buildings, waters, water courses, privileges, and appurtenances" to Edward Shippen and William Erwin. The latter on January 27, 1814, reconveyed his one-third share to Griffith, who soon sold it to William McMurtrie.⁶ On June 29, 1814, he also sold Shippen and McMurtrie jointly the one-third interest which he had retained to himself.⁷

One of the most interesting accounts of this entire property may be found in the *Trenton Federalist*, advertising a "Valuable Property for Sale in New Jersey." The property is described as follows:

The Furnace, Out-buildings, and everything complete for carrying on the Furnace, and the situation and advantages of the same, are not surpassed by any similar establishment in New Jersey:—There is connected with it, a Saw-Mill, Dwelling-house, Labourers houses, &c. the whole property new and in a complete state of operation; also there is an excellent site for a Forge, Slitting and Rolling mill, or other water works; the dam across the river Manasquan, is made at great expense. A four fire Forge, Trip hammer, &c. was erected on this site.

Trenton Federalist, March 3, 1817.

The ore-beds were conveniently located and could furnish an abundant supply, only four "ore raisers" being required to provide the furnace with enough ore to operate all the year round.

The furnace had a capacity of 700 tons annually, if kept in blast the whole year.

Owing to the wood being chiefly oak, or due to "other circumstances," it was found that the furnace required not more than

⁵ *Ibid.*, Book W, p. 519.

⁶ *Ibid.*, Book X, p. 295.

⁷ *Ibid.*, Book X, p. 409.

New Jersey Forges and Furnaces

two-thirds the quantity of coal per ton of castings, etc., generally consumed at other furnaces.

At the time of this offer for sale, the works were evidently in operation, since there was about 70,000 bushels of "coal" on the bank and several thousand cords of wood cut and ready to burn. A large quantity of ore and about eighty-five tons of scrap was also ready for use. The only reason given as the necessity for selling was the lack of capital to properly carry on the works.

Shippen and McMurtrie were not successful in finding a purchaser for the Monmouth Furnace and continued it during the next three years. By virtue of a judgment against them, Sheriff Charles Parker on May 1, 1817,⁸ reconveyed the Monmouth Furnace, saw-mills, houses, buildings, etc., together with about 5000 acres of land in Howell and Dover townships to William Griffith for a consideration of five dollars and subject to all the encumbrances. The next owner was William Newbold, who on October 8, 1821, purchased the property, as recorded by a deed from Sheriff John I. Ely. The recitals in this document furnishes information as to how the several tracts included in the Monmouth Furnace lands, numbering forty-two different parcels, were acquired.

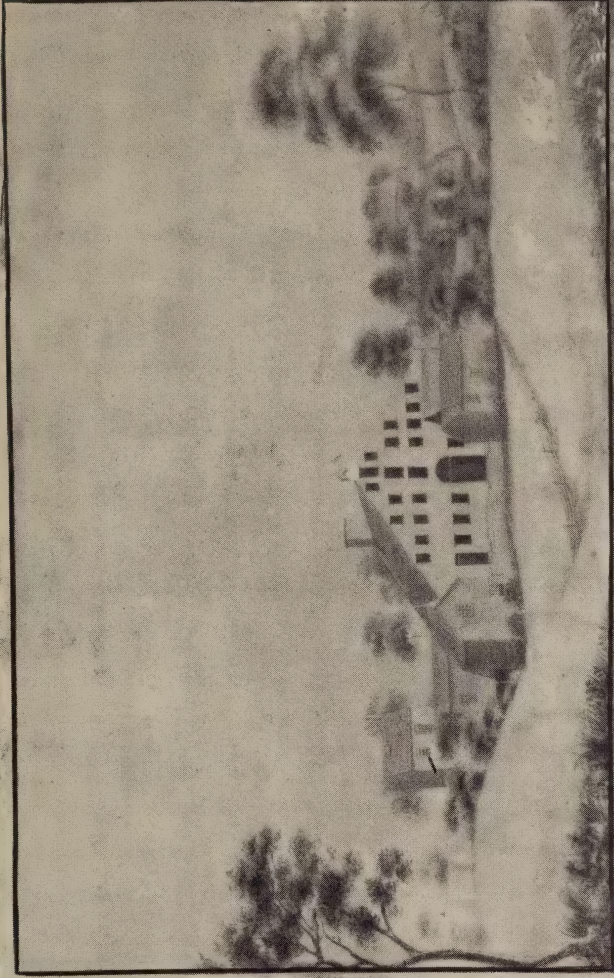
So far, other than a schedule of changes in the land titles nothing is known as to the operations of the furnace. However, from the numerous times Monmouth Furnace is mentioned in the deeds and the emphasis placed on the ore lands and water rights, the furnace must have been the outstanding feature of the property.

Benjamin B. Howell is the first known operator of the ironworks. In 1821, he leased from William Newbold "the Monmouth Furnace Property," including the right "to work stone, seed or shot, shell or loom ore." From this time the works became known as the "Howell Works," or the "Howell Iron Furnace." It is said that it was Howell who first directed the attention of James P. Allaire to the value of the Monmouth Furnace.

On April 27, 1822, James P. Allaire, an extensive iron manufacturer and marine engineer, purchased the several tracts known as the Monmouth Furnace property from William Newbold.⁹ At that time Allaire had a large shop in New York City in which marine engines and steam boilers were built. His chief interest in securing the Monmouth Furnace was to obtain for his New York shops a steady supply of pig iron, made from the bog ore on the tract.

⁸ *Ibid.*, Book C2, p. 276. This deed was not recorded until November 22, 1820.

⁹ *Ibid.*, Book Q2, p. 195.



HOWELL FURNACE.

THE HOWELL WORKS

Monmouth Furnace

Before embarking extensively into the making of pig iron Allaire sent samples of the various ores to Professor Silliman of Yale College, and Mr. Wainright quotes the results of the analysis as follows:

	Stone Ore	Black Seed Ore	Loom Ore
Oxyd of Iron.....	56%	58%	54%
Alumino.....	15	14	18
Manganese Oxyd...	4	3	3
Water.....	16	15	17
Silex.....	6	8	4
Phosphate of Iron..	1½	1	2
Loss.....	1½	1	2

The old furnace and forge located on these lands were greatly enlarged, and a gristmill, a bakery, a slaughter house, and various buildings for the different departments of the works were built. Houses for the superintendents, foremen, clerks, and workmen, of whom five hundred were at one time employed, were erected. A schoolhouse and a church were founded, the schoolmaster and minister being engaged at the expense of Mr. Allaire.

In 1824,¹⁰ Allaire sold a one-half interest in the property to John Haggerty, a merchant of New York. This moiety was transferred to Thomas P. Wallworth of New York for a consideration of \$13,000 on August 3, 1827. Besides the lands this purchase specifically included a one-half interest in all the "utensils, tools, moulds, flasks and implements on the said premises," as well as articles of furniture in the "big house," wagons and lesser chattels.

In 1828, James P. Allaire, Thomas P. Wallworth and associates were incorporated by the legislature as the Howell Works Company, with an authorized capital of \$150,000, "for the sole purpose of manufacturing iron, hollow-ware, brass castings and other articles in Howell township, in the county of Monmouth."¹¹ The company was authorized to hold real estate, but "the real estate to be purchased and holden shall be such only as is now owned by the said James P. Allaire and Thomas P. Wallworth, in the county aforesaid, or as may be necessary for the purposes for which the corporation is established." In May, 1828, Allaire and Wallworth transferred their respective shares to the Howell Works Co. for a consideration of \$20,000 each.

In a letter dated March 16, 1833, to Nicholas Biddle, president

¹⁰ *Monmouth County Deeds*, Book S2, p. 92.

¹¹ *Session Laws of New Jersey*, 1828, p. 209. T. F. Gordon, *Gazetteer of New Jersey*, p. 160, says the principal stockholder was James P. Sairs, which is clearly an error.

New Jersey Forges and Furnaces

of the Bank of the United States, Allaire in making application for a loan of \$40,000, said that he was the sole owner of the Howell Works Company, "which have not been productive until recently—they are now in full operation and have the last year given a net income of \$15,000." At that time he stated that the property represented an investment of \$170,000, made up of the capital stock and the balance borrowed on notes.

The products of this company consisted largely of hollow-ware, such as caldrons, pots, kettles, and bake-pans, stoves, screws, sad-irons and some iron pipes.¹² They enjoyed a wide distribution under the name of Allaire Iron Works, which was the name of the foundry in New York City, and at the time was one of the largest builders of steam engines in the country. The finished articles were carted to Oceanport on the Shrewsbury River for shipment to New York and other points.

There is a tradition that a canal ran from the furnace to deep water on the Manasquan River and that the finished products were taken to New York by sailing vessels. There is no definite verification of this fact, nor can any traces now be found where such canal was located. Mr. John W. Wainwright of Lakehurst, now over eighty-seven years of age, has informed the writer that he remembers the canal very well. He says it was built to feed the furnace pond and was not used for the transportation of ore or finished products.

The successful introduction of anthracite coal in iron manufacturing and the increasing cost of charcoal gave the Pennsylvania furnaces such a decided advantage that the bog ore iron industry of New Jersey faced ruin, and the making of iron at Howell Works was abandoned in 1846.

In 1851, title to the entire tract was transferred by sheriff deed to James P. Allaire.¹³

Following the death of Allaire, which occurred on May 20th, 1858, one of the most bitterly fought battles was begun in the courts of New York and New Jersey and was not finally settled until 1876. By the will of James P. Allaire, made October 7, 1850, his second wife, Calecia Tompkins Allaire and her son Hal were left the bulk of his property, while the children of his first wife, Thromockton A., Frances W. Roe, Maria H. Andrews, James, and

¹² It has been stated that pewter plates and bowls were, at one time, made at the Howell Works, but so far no authority can be found for this statement. It is, however, possible that such articles may have been made by some of the skilled workmen employed there, from time to time, but not as a part of their employment.

¹³ *Monmouth County Deeds*, Book P5, p. 544.

Monmouth Furnace

Charles B., who he stated had been provided for during the days of his prosperity, were cut off with minor bequests.

Hal Allaire, after the death of his father, continued to reside on the estate, living the life of a country gentleman. The works were allowed to go into decay, the houses abandoned by the workmen, who sought occupations elsewhere, and the school and church permanently closed. The once prosperous village became only a mass of crumbling ruins and overgrown gardens to which the name "Deserted Village" was quite appropriate. This tract was later owned by Mr. Arthur Brisbane of New York who in 1928 turned it over to the Boy and Girl Scouts. It is now called Camp Burton.

MOUNT HOLLY IRON WORKS

Burlington County

IN 1715, by two deeds, Peter Bard Sr., merchant, of Burlington, conveyed to John Borrowdall, brewer, of the same place, for a consideration of five shillings, the undivided half part of 4000 acres of land in Burlington township with "one-half part of all the saw mills, iron works, timber works which said Peter Bard purchased of Richard Eayres, Esq., . . . and John Goslin as co-partners and tenants in common."¹ This survey lay on the southerly side of Northampton River (Rancocas Creek) and contained all the land between the main and north branches of the Rancocas, "including the iron works at Mount Holly and the Eayres Town Mill property."

This is the first notice of an ironworks at Mount Holly, but the records do not furnish any further information as to its equipment or activity. It evidently went out of existence within a few years, and must not be confused with the next works, of which there is a continuous record from its beginning to the time of its destruction.

In 1730, Isaac Pearson, Mahlon Stacy, and John Burr purchased from Thomas Brian 345 acres of land on the south branch of Rancocas Creek for £225, and built a furnace and forge where the sawmill at the south end of Pine street stood in later years.² These works were operated by the founders until 1743, when, owing to the death of Mahlon Stacy, the other partners, Isaac Pearson of Burlington and John Burr of Mount Holly, offered them for sale. The notice of this sale gives the first definite information regarding the location and equipment of these works.

TO BE SOLD

Two equal and undivided third parts of a good substantial Furnace, for making Sows and Pigs of Iron, with Utensils fitting to work the same, and a large Forge with good Brick and Stone Chimneys, well compleated for two Finerys and Chaffery, for Manufacturing the Sows and Pigs into Bar-Iron, with necessarys for carrying on the same; all Scituate and being about a Quarter of a Mile from a good Grist Mill,

¹ F. W. Earl in *Proceedings of Surveyor's Association of West Jersey*, pp. 104ff.

² *New Jersey Archives*, First Series, XI, p. 544.

Mount Holly Iron Works

Saw Mill, and fulling Mill: Which Is in the *Town of Mount Holly*, in the County of *Burlington*, in the Western Division of the Province of *New Jersey*, and is built on a good Constant Stream of Water 27. miles from *Philadelphia*, and is Water Carriage within 3 or 4 Rods of the Furnace and Forge, with plenty of Wood at a small distance for making of Charcoal, and good Coal Houses and Smiths Shop . . . Also a good Iron Mine which makes the Toughest and best Bar-Iron, about 18 Miles Distance, all Water Carriage except one Mile and a Quarter, a good Road and a great Quantity of cold short Mine, about 4 Miles Distant from the Works; a good Road without Hill in the way, and this is exceedingly good for potting of any sort of Cast ware.

Pennsylvania Journal, January 11, 1743

It was stated that the other third owned by Mahlon Stacy, deceased, could also be purchased at the same time. Not finding a buyer in response to this notice, John Burr offered for sale through the *Pennsylvania Gazette*, July 12, 1744, his one-third interest in the ironworks and also one-third part of the mine and 345 acres of land attached. The other two-thirds, owned by Isaac Pearson and the Mahlon Stacy estate, he stated was also for sale.

On March 25, 1747,³ John A. DeNormandie, of Bristol, Bucks County, Pennsylvania, merchant, purchased the Pearson interest for £300 lawful money of Pennsylvania, and on March 26,⁴ he paid John Burr £300 for his one-third, and subsequently purchased "the right of digging ore, etc." on an adjacent tract from Thomas Shinn. The Stacy share was bought from his heirs on April 16, 1747,⁵ thereby giving DeNormandie entire control of the works. The purchase, as subsequent records show, was made in the name of DeNormandie⁶ with the understanding that Peter Bard⁷ of Philadelphia, Evan Morgan⁸ of Philadelphia, and John

³ S. S. O., *Deed Book H*, p. 120.

⁴ *Ibid.*, *Deed Book H*, p. 122.

⁵ *Ibid.*, *Deed Book H*, p. 115.

⁶ John Abram DeNormandie of Bristol, Bucks County, Pennsylvania, was a French Huguenot, who, with his parents, came to America in 1706. He married Henriette Elizabeth, daughter of Dr. Francis Gaudonett and had two children: Dr. John Abram, who married Rebecca Bard, a sister of Peter Bard, and Mary, who married Peter Bard, above mentioned. This explains the close association of the Bards and DeNormandies and how the latter became connected with the Mount Holly Iron Works. John Abram DeNormandie died November 17, 1757.

⁷ The Peter Bard here mentioned was the second son of Peter Bard, Senior. He was born in 1713, and prior to coming to Mount Holly in 1741 had been engaged in business in Philadelphia. He died at Mount Holly, November 30, 1769, and Daniel Ellis and James Sterling of Burlington were named as administrators of his estate.

⁸ Evan Morgan was a merchant in Philadelphia, and in the *Pennsylvania Gazette*, in 1739 he advertised that

New Jersey Forges and Furnaces

Pass,⁹ of Mount Holly, each were to have a one-quarter interest.¹⁰ Evan Morgan died and his interest was devised to his son, Morris Morgan, who conveyed it to John A. DeNormandie. On November 5, 1747,¹¹ Peter Bard obtained a deed in fee for his one-quarter interest and on May 1, 1749,¹² John Abram DeNormandie,¹³ "Doctor of Physic" of Bristol, Pa.

The works were now operated under the firm name of Peter Bard & Co., and in August, 1752, we find them advertising for the return of a runaway Irish servant man.

Evidently DeNormandie was not satisfied with his bargain, since he offered his one-quarter interest for sale in the following notice:

TO BE SOLD BY

John Abraham Denormandie

One undivided quarter part of Mount-Holly Iron-Works, consisting of a furnace, two forges, in which there are three fineries and a chafery, several dwelling-houses, and about 400 acres of land, amongst which good meadow ground and woodland; there are also stores, and all other necessary improvements for carrying on the said works to advantage.

He sells at the lowest prices super-fine Mens and Women's Silk, cotton and thread Hose, Castor Hats, Women's Gloves, a curious Parcel of Fans, fine red and yellow leather and sundry other goods.

He was the father of six sons and three daughters, as follows: Evan, who took a prominent part in the French and Indian War; Dr. John Morgan, the brother-in-law of Francis Hopkinson, the "Signer;" and of Dr. Duché, the Tory; Thomas, Colonel George, Morris, Benjamin, Martha, Mary, and Hannah.

The will of Evan Morgan, Sr., was dated July 2, 1743, and was proved December 2, 1748. Morgan had owned some land in Mount Holly as early as 1739, so that he was not unfamiliar with the situation at the iron works.

⁹ Of John Pass, styled in the deed, "founder," little is known. He was a resident of Mount Holly in 1746 and in that year advertised for a runaway servant (*Pennsylvania Gazette*, September 4, 1746). He was later a member of the firm of Pass & Stow, who recast the first bell which hung in the old State House in Philadelphia and is revered as the Liberty Bell.

¹⁰ S. S. O., *Deed Book G G*, p. 22.

¹¹ S. S. O., *Deed Book G G*, p. 22.

¹² S. S. O., *Deed Book K*, p. 6.

¹³ Dr. John Abram DeNormandie, the son of John A. DeNormandie, was born at Bristol, Pennsylvania, in 1713 and died in 1803. At one time he was a justice of the peace of Bucks County where he had an extensive practice in medicine. In 1773, he went to Geneva, Switzerland, the home of his ancestors, giving up his "practice in Physic" and selling the greater part of his property, as he intended to remain abroad. During his absence the Assembly of Pennsylvania passed the "Attainder Act" which required certain persons to come forward before April 20, 1778, for trial, under penalty of forfeiture of their estates. Being absent from the country, he was adjudged an enemy to the Continental cause. This is the basis of Sabin's statement that Dr. DeNormandie was a Tory. On his return to America he petitioned the Assembly to raise his attainder so that he might finish the sales of his real estate. An act was passed September 2, 1778, granting him ninety days to complete the transactions before leaving the country.

Mount Holly Iron Works

A particular inventory of the whole, with terms of sale, may be seen at Mr. Andrew Reed's in Philadelphia, or at the said John Abraham Denormandie's, living in Bristol, Bucks County.

Pennsylvania Gazette, December 14, 1752

Difficulties and dissatisfaction arose among the partners and they became indebted to sundry persons for materials and labor. It being impossible to dissolve the partnership, all the members thereof agreed by indentures dated September 3 and 9, 1754, to transfer the property to Henry Paxson¹⁴ and Joseph Hollingshead,¹⁵ who were to sell it and pay off the debts. They gave notice that on May 1, 1758, they would offer for sale at Thomas Shinn's hotel in Mount Holly, the works which then contained one finery with three fireplaces, a chafery and all the utensils, buildings and lands and "a Right to a Quantity of Iron Ore, lying in Barker's Creek, near the said works."¹⁶

At this sale Peter Bard made the successful bid, which was £612/10/0, and on May 3, 1760, received a deed for the property.¹⁷ His brother Samuel soon became associated with him, and the works in some of the old papers were now called "Bard's Iron Works." Again the enterprise does not seem to have prospered, and Bard's affairs became badly mixed up. In 1763 he tried to sell the plant, which he described as consisting of:

One Forge or Finery, with three Fire-places, three pair of Bellows, and all the Utensils thereunto belonging. Also one other Forge or Chafery, with one Fire-place, and one Pair of Bellows, with all the Utensils belonging to it, built for the Conveniency of the Hammerman, where he meets with no Interruption from the Finers; both built upon the main Branch of Rancocus-Creek, Water-carriage from the Forge to Philadelphia; a large and compleat Coal-House, four good framed Dwelling-houses, three of which made for two Tenements each, for the Workmen. . . . ; with about 500 Tons of Bog Ore on the Bank, and 360 Acres of Land, bordering on the Town and joining the Works, . . .

Pennsylvania Gazette, October 27, 1763

¹⁴ Henry Paxson was a brother-in-law of Thomas Shinn, having married his sister, Mary Shinn, and lived on Mill Street, Mount Holly. He represented Burlington county in the General Assembly in 1754-1761, 1769-1772, and 1772-1775. Thomas Shinn, at whose house the sale was to be held, was Sheriff of Burlington County in 1761.

¹⁵ Joseph Hollingshead lived at Burlington and was one of the managers of the Provincial Lottery to raise money to pay the Indian claim to lands in the Province of New Jersey.

¹⁶ *Pennsylvania Gazette*, March 30, 1758.

¹⁷ S. S. O., *Deed Book P*, p. 431.

New Jersey Forges and Furnaces

This advertisement was followed by a public notice in the *Pennsylvania Gazette*, April 26, 1764, by Samuel Neave, Jeremiah Warder, and Francis Richardson, that they were assignees of the Estate of James Childs, who held a mortgage of £470 against the ironworks, and had issued a writ of ejectment against the tenant in possession. In response to this Bard replied, through the same paper, under date of May 10th, that Childs had no equitable right to the money said to be due under the mortgage, and that he would protect any intending to purchase, by allowing payment to be withheld until the matter had been settled by the courts.

By an agreement, dated "26th of Second Month, 1768," Peter and Samuel Bard covenanted to give to Daniel Offley¹⁸ "a good and sufficient title in law" for the ironworks. Offley claimed to have laid out a considerable sum of money in the repairs, etc., and in part payment of the purchase price. The Bards, however, failed to carry out their part of the agreement, and Offley, to save his investment, purchased the Childs' mortgage above mentioned, claimed possession of the property thereunder, and announced that he was prepared to defend his title. It is not known that Offley actually operated the Mount Holly Works during the dispute over the title.

Peter Bard having died on November 30, 1769, matters finally reached the point where the sheriff, John Finlay, advertised the works for sale on March 24, 1770, at the suit of Henry Paxson and Edward Tonkin. It was this sale which was resisted by Daniel Offley.

For some years, owing to the financial difficulties of Bard, the ironworks had only been run intermittently. During the next few years the plant was operated by various owners or lessees. Thomas Mayberry seems to have continued the longest. According to an old account book¹⁹ we find him charged with work done by a bricklayer or mason and his two assistants under date of February 3, 1772.

The identity of this Thomas Mayberry is not clearly established. Besides the one at Mount Holly and later at Taunton Furnace, Swank mentions another at Green Lane Forge in Montgomery County, Pennsylvania, and still a third one as among the ironmasters who in 1785 petitioned the General Assembly of Pennsylvania for a protective duty on iron. The Thomas Mayberry of

¹⁸ *Pennsylvania Gazette*, May 31, 1770. Daniel Offley (1724-1789) about 1755 established an anchor forge on the west side of Front street between Spruce and Pine streets, Philadelphia. He occupied a prominent place in the Society of Friends.

¹⁹ The old book was recently found by Mr. N. R. Ewan and contains the accounts of an unknown mason or bricklayer in or near Mount Holly and covers the years 1759-1763 together with other occasional entries of a later date.

Mount Holly Iron Works

Mount Holly married Cynthia Lanning on May 11, 1772, and after her death he married Mary (Polly) Spring, or Spang of Philadelphia on January 31, 1780. His second wife died within a few months of their marriage, and on March 12, 1782, he married Mary Sinclair. In a deed dated July 11, 1785, she joined her husband in a deed conveying Taunton Furnace to George Hastings. The year before he had given notice that he intended leaving the state, and at the time of making this sale was living at Pottstown, Pennsylvania. Mrs. James mentions Lydia, daughter of Thomas and Rebecca Maybury, as the wife of Dr. Francis R. Potts.²⁰ She further says:

Thomas Maybury married a descendent of the first Thomas Rutter. During the Revolution he owned a forge at Mount Holly, N. J., where he manufactured boiler-plates, from which the camp-kettles of the Continental army were made.

Mrs. James believed that Thomas Mayberry of Mount Holly and Thomas Maybury of Pottstown were the same. According to Poulson's *American Daily Advertiser*, March 20, 1806, a house belonging to the estate of Thomas Maybury, deceased, was to be sold at public vendue, the terms to be had on application to Dr. Potts, living on the premises, or to Thomas Maybury in Philadelphia.

Under Thomas Mayberry, the works had its greatest expansion. Kettles, pans for salt evaporation, bar iron and sheet iron were the principal products. Cannon balls and shot are reported to have been made, but the records do not disclose any deliveries of these articles which were made by the Mount Holly Iron Works of New Jersey.²¹

On June 14, 1776, the Continental Congress instructed Timothy Matlack to write to Thomas Mayberry of Mount Holly, the manufacturer of sheet iron, to send down to him five tons of sheet iron which was to be made into camp kettles by Thomas Bales, blacksmith. Mr. Matlack was directed to receive the iron and deliver it out as it may be wanted and receive the kettles as fast as made.²² The bill of Thomas Mayberry for 117 29/100 dollars for plated iron was ordered paid June 28, 1776, and on August 17, John Bales was paid \$249 for 187 camp kettles.

Mayberry apparently devoted most of his energies to turning out

²⁰ Mrs. Thomas Potts James, *Memorial of Thomas Potts, Junior*, p. 269.

²¹ There is much confusion between the furnace at Mount Holly, Cumberland County, Pennsylvania, and the Mount Holly Works in New Jersey. This has, no doubt, caused some articles to be improperly credited to the New Jersey Works.

²² *Journals of Congress*, II, 203.

New Jersey Forges and Furnaces

sheet and rod iron, as will be seen from his advertisement in the *Pennsylvania Evening Post*, April 23, 1776, as follows:

To be SOLD, by Thomas Mayberry, in Mount Holly, West-New-Jersey, SHEET and ROD IRON of different sizes.

When the British occupied Mount Holly towards the end of 1776, Thomas Mayberry, who was looked upon as a staunch patriot, found it best to move out. He now took up his residence at Taunton Furnace and abandoned the Mount Holly plant. It was purchased early in 1777 by Colonel John Cox of Philadelphia, who placed Richard Price in charge as superintendent. When Cox took possession, he immediately advertised for a number of forge men, "nailors," and wood cutters. The rate of pay for the wood cutters was to be three shillings nine pence per cord, "the wood being chiefly pine and maple."

Cox at the time occupied very confidential relations with the Council of Safety of Pennsylvania. When the latter became dissatisfied with the delays of Thomas Savage in getting the salt works at Toms River, New Jersey, in operation a representative was appointed to inspect the same, *after first conferring* with Colonel Cox at "Batstow."²³ By a later letter it appears that he was authorized to buy an additional tract of land of 1400 acres from James Mott for the use of the Pennsylvania Salt Works, and in this connection wrote a letter to President Wharton of the Council which is dated at Mount Holly, November 23, 1777.²⁴

From subsequent events, it is quite evident that this plant was now actively employed in furnishing materials for the American army. In a preamble to an act passed by the General Assembly of New Jersey, sitting at Haddonfield, on June 5, 1777, the importance of these works and also the furnace at Batsto are set forth in the strongest terms. Thus:

Whereas it is highly expedient that the Army and Navy of the United States of America should be furnished as speedily as possible with a Quantity of Cannon, Cannon-Shot, Camp-Kettles, and other Implements and Utensils of Iron which the Furnace at Batsto and the Forge and Rolling Mill at Mount Holly from their local Situations and other Considerations are well adapted to supply.

Under this Act Colonel Cox, styled "Proprietor and Conductor," was authorized to form a military company, with a captain and two

²³ *Pennsylvania Archives*, First Series, VI, p. 16.

²⁴ *Ibid*, VI, p. 29; *Ibid*, Second Series, III, p. 699.

Mount Holly Iron Works

lieutenants, to be selected by him, and commissioned by the Governor. These men were exempted from the draft and only subject to military duty in case of invasion by the enemy.

When the British marched through Mount Holly on their retreat from Philadelphia to New York in June, 1778, these works were completely demolished²⁵ and were never rebuilt. Why the iron-works were not destroyed during the Hessian occupation of Mount Holly in December, 1776, has never been explained.

²⁵ *New Jersey Gazette*, June 24, 1778.

MOUNT HOPE FURNACE

Morris County

THE Mount Hope Furnace in Rockaway township, about three miles north of Dover, was erected by John Jacob Faesch in 1772,¹ on a tract of land which on February 23, 1773, he leased from Colonel Jacob Ford, Jr., "of Pequannock, for a term of forty-two years from the first day of April preceding." The annual rental provided by the lease was £400, but later was reduced to £300, when Faesch complained that this amount was burdensome. On May 10, 1793, Judge Gabriel Ford, who had obtained title to the Mount Hope furnace on judgment proceedings, conveyed the tract to John J. Faesch, thus terminating the lease of 1773. Faesch also purchased a large part of the "Mount Hope Tract," surrounding the Ford survey, from William Burnett and John Johnson, whose title bore date of September 9, 1772. This conveyance was for 6271 acres.

Associated with Faesch was David Wrisberg, who had also been one of Peter Hasenclever's superintendents with the London Company. It was Wrisberg who demanded that Robert Erskine should publicly retract some of the statements which he had made in the newspapers of that period about the managers under Hasenclever's administration. Daniel Wrisberg died in 1774, and the administrators of his estate were John Jacob Faesch and Moses Tuttle.

John Jacob Faesch, who was a native of Switzerland, came to America, as we have already seen, about the time the London or American Company began its operations. He was a thoroughly practical iron manufacturer and had much to do with the building of the works at Charlotteburg, Ringwood, and Long Pond. He became not only one of the most prominent men of Morristown, but also one of the leading ironmasters of his day. Among the various civil offices which he held was as a delegate from Morris county to the State Convention of 1787 which ratified the Federal Constitution. The New Jersey Historical Society possesses his dispensation as Master of a Masonic Lodge in Morris County, it being the oldest document pertaining to the work of the Grand Lodge of New Jersey known to be in existence today.

¹ A. H. Heuser, *The Forgotten General*, p. 71, says Faesch established himself at Mount Hope Iron Works, Feb. 1, 1773.



THE JOHN JACOB FAESCH HOUSE

Mount Hope Furnace

During the Revolution, however, this furnace was actively engaged in producing shot, shells and cannon for the Continental Army, and one of the cannon-ball moulds is still preserved in the Washington's Headquarters at Morristown. In a letter which Faesch wrote to Lord Sterling he asked the latter to use his influence to obtain some contracts for cannon to be made at Mount Hope Furnace. This letter was forwarded to the Continental Congress, and on July 25, 1776, was referred to the Committee authorized to contract for casting cannon.² It is not known what action was taken at the time on this request. In answer to a petition by John Jacob Faesch, "Proprietor and Conductor of Mount Hope Furnace," and Charles Hoff, Jr., superintendent of Hibernia Furnace, the New Jersey Legislature adopted a resolution on October 7, 1777, exempting fifty men at Mount Hope and twenty men at Hibernia from the draft for general military duty. It was stated that Mount Hope could make cannon, cannon shot, refined bar iron, shovels, axes, and other implements.

The patriotic attitude of Faesch during the Revolutionary War aroused the displeasure of the Tories and subjected his property to many depredations. In March, 1777, he secured, through the personal approval of President Washington, thirty Hessian prisoners, whom he used as wood choppers and furnace men. The government furnished him with "thirty stands of arms," with which to equip the guards that he was required to maintain over the Hessians. Despite all efforts, not a few of these prisoners escaped.

The proprietors, though busily engaged in producing munitions did not overlook the commercial side of the business, as will be seen by the following advertisements:

MOUNT-HOPE and HIBERNIA FURNACE

Are now in Blast;

Where all sorts of Hollow Ware, and other sand castings are made: Any person wanting such articles may apply to JOHN JACOB FAESH, owner of Mount-Hope furnace, and CHARLES HOFF, jun. agent for Hibernia furnace, both in the county of Morris and State of New Jersey.

New Jersey Gazette, September 1, 1778.

To be SOLD for cash, or exchanged for any kind of country produce, at Mount Hope furnace, SCYTHES, nails, pots, kettles, griddles, and-irons, smoothing-irons, mortars, cart and waggon boxes, six and ten plate stoves, weights, etc.

New Jersey Journal, June 22, 1779.

² *Journals of Congress*, II, 268.

New Jersey Forges and Furnaces

The weights mentioned in this advertisement were to replace the leaden window, clock, and scale weights seized by the Government, the Provincial Congress having, on July 16, 1776, ordered the Township Committees to collect all leaden weights in shops, stores, and mills of one pound weight and upwards; also all lead in and about every house and other places, tendering payment at the rate of sixpence (Proclamation money) per pound.

Towards the close of the Revolution money became scarce and nearly all trading was carried on by exchange of commodities. The following notice aptly illustrates this situation:

TO BE SOLD,

Or exchanged for all sorts of produce, and other articles necessary for carrying on iron works;

All sorts of cast iron kettles, pots, large and small skillets, small mortars, griddles with or without legs, waggon, chair and cart boxes, close stoves, six and ten plate stoves, open fire places, commonly called Franklin stoves, &c. &c. &c. wholesale and retail, by me at Mount-Hope furnace, Morris County.

JOHN JACOB FAESH

New Jersey Gazette, September 2, 1781.

John J. Faesch & Co. operating the Mount Hope Company, was assessed in 1796 for 305 acres of improved land at one shilling per acre, for 5955 acres of unimproved land at threepence per acre, and for one furnace, with a total valuation of £234/10/9. In 1792, they were assessed for a furnace and two forges.

After Faesch's death on May 21, 1799, his executors—David Ford of Morristown, Richard B. Faesch of Boonton, and John J. Faesch of Mount Hope, issued the following advertisement:

MOUNT HOPE FURNACE, IN BLAST;

TO BE LET for the present year, together with all the stock on hand (which is sufficient for a six months blast) all the tools, patterns, stalks, teams, carts, waggons, &c. &c. necessary for carrying on the same. The furnace was put in blast the 3d inst. and is calculated to blow seven months at least.

Trenton Federalist, June 17, 1799.

Finding no one wanting to rent the furnace, the two sons continued to carry on the business, but were soon confronted with numerous claims against their father's estate which finally reached

Mount Hope Furnace

the Court of Chancery. A special commissioner was then appointed to sell the various properties held or owned by John J. Faesch.

It is interesting to note the properties which he held at the time of his death:

- (1) Mount Hope Furnace and Middle Forge tracts—7600 acres.
- (2) Boonton Forge.
- (3) The Jackson or Jacobs Mine.
- (4) Long Pond Mine.
- (5) A Share of the Morris Academy.
- (6) Several lots.

Eventually the properties were split up, the furnace and adjacent land being sold in 1809 to Moses Phillips, Jr., of Orange County, New York, whose sons, Henry W. and Lewis, operated it for a short time. Phillips also purchased Middle Forge.

The Mount Hope Furnace was offered for rent, according to the *Trenton Federalist*, November 22, 1813, together with a large tract of woodland containing an inexhaustible supply of ore. The ore mine was said to be within eighty rods of the furnace and a large part of the wood within one-half mile and none over two miles from the furnace. The cost of ore was estimated not to exceed two dollars per ton at the works. At that time the furnace had not been in operation for several years.

Following this announcement Eliphalet Sturtevant, Abraham Kinney, and Robert McQueen, trading as McQueen & Co., leased the works in 1814, and after completing necessary repairs they began making pig iron. In a short time Kinney and McQueen withdrew and Colonel Thomas Muir bought an interest. In 1816, the Works were operated by Sturtevant, Muir & Co. The furnace was finally abandoned about 1825.

MOUNT PLEASANT FORGE

Morris County

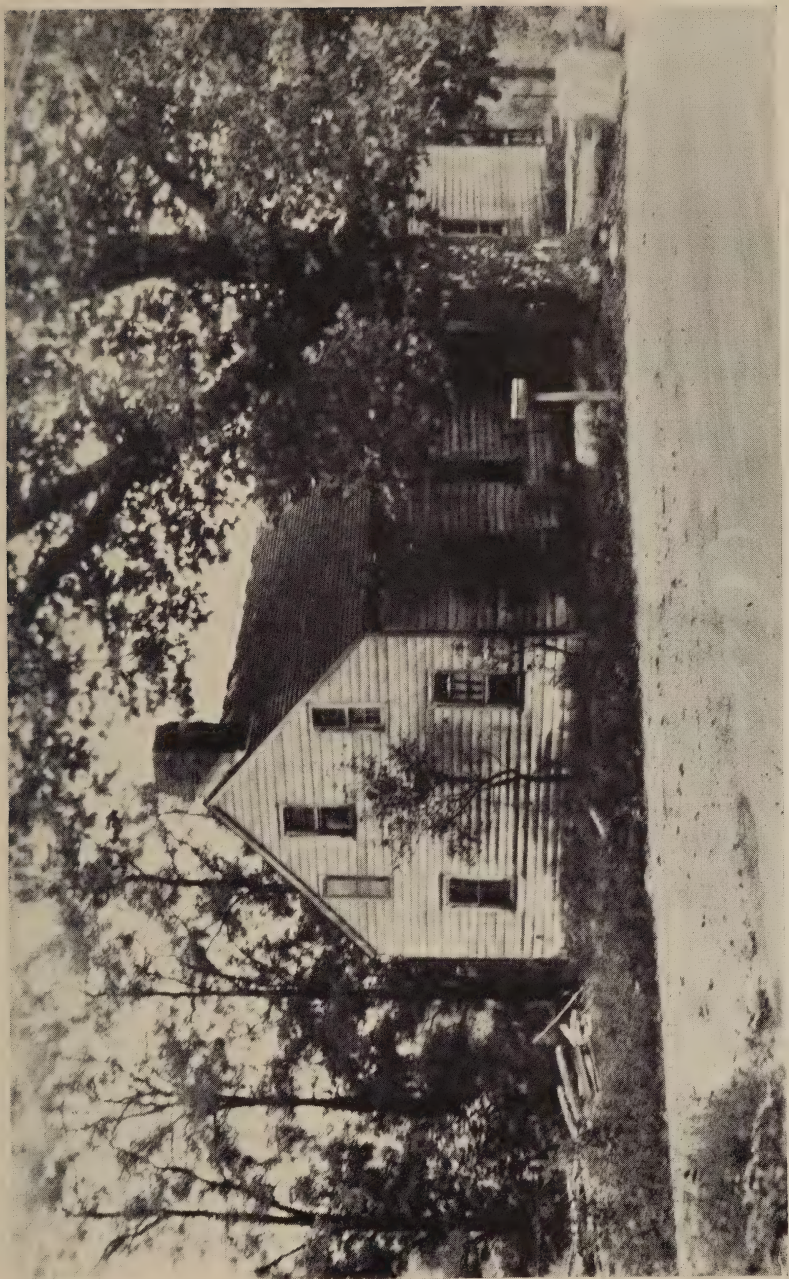
IN 1750, Colonel Jacob Ford, Sr., erected a forge, consisting of a finery and chafery, on the east branch of the Rockaway River, near its junction with the Burnt Meadow Brook and three miles west of Rockaway, which he called Mount Pleasant. The site, which was twelve miles from Morristown and five miles from Oxford Furnace, was selected because of the extensive body of iron ore nearby. About 1756 Moses Tuttle (1732-1819), who had married a daughter of Colonel Ford, moved to Mount Pleasant and became the manager of the forge. By prudence and thrift he acquired considerable property on which were discovered several valuable iron mines.

Moses Tuttle was looked upon as a man of wealth, but when the New Jersey Assembly made the rapidly depreciating paper money issued by the Continental Congress and also that issued under its own authority legal tender at rates far above their values, fortunes vanished. Tuttle, along with other men of wealth, became insolvent and went to Kentucky, where he remained for two years. However, we find him trying to sell a five-hundred acre farm in 1779,¹ and in the tax duplicates for 1786 the Mount Pleasant Company, of which Moses Tuttle was the head, was assessed for one forge fire and the following year for one and two-thirds fires. In 1789, this company was controlled by Hogland, Hoff, and De Camp and was taxed on four and one-half fires and the following year on three fires, while Moses Tuttle is assessed in his own right for one-half a fire.

It is stated by some historians that Col. John Ford, Jr., at one time had title to this forge and that he had leased it to John Jacob Faesch by whom it was operated. This is evidently a mistake, as no record has been found to connect Faesch with Mount Pleasant, either in his advertisements, or in the inventory of his estate.

The Hoff family became identified with various activities around Mount Pleasant through Charles Hoff, Jr., who married Hannah, daughter of Moses Tuttle, and moved there about 1781. The Hoff homestead, often spoken of as the "Mansion," was directly across

¹ *New Jersey Archives*, Second Series, III. 272.



THE HOFF MANSION

Mount Pleasant Forge

the road from the Moses Tuttle house. John Hoff for many years kept the neighborhood store and, in 1779, advertised for sale "Excellent West India rum by the quantity or small measure, sugar, coffee, German steel and sundry goods of the grocery kind."

In later years there were two forges in operation at Mount Pleasant, one by Joseph T. Hoff and the other by Jeremiah Baker, but it is not known whether either of these was the original forge at this place.

NEW MILLS OR PEMBERTON FORGE

Burlington County

AMONG the pioneer settlers in Burlington County were William and Thomas Budd who, as early as 1693, had located extensive tracts of land on which the present town of Pemberton stands. In 1723, David Budd inherited from his father, William, the son of William, Sr., a tract situated on the west side of the main street of Pemberton. By deed, dated December 1, 1752, he conveyed to Robert Smith, Daniel Smith, and Patrick Reynolds, each a one-quarter interest in a quantity of land sufficient for the erection of a gristmill and sawmill, together with some town lots in the village, retaining a one-fourth share for himself. Patrick Reynolds, at the time a resident of Bridgetown (Mount Holly), was an experienced millwright and to him was assigned the task of erecting the mill. These mills replaced a gristmill, built a number of years previously, which had gone into decay. From this fact, the old village of Hampton Hanover,¹ so marked on a town-plan dated 1699, soon took the name of New Mills.

Patrick Reynolds, a native of the north of Ireland, settled in Burlington County in the early 1730's. He was later the owner of an extensive tract of land in Mount Holly. Washington Street, which ran through his property, was at one time called Reynolds Street and the neighborhood was spoken of as "Irishtown." This name might have been given in honor of his native country or in derision. The name of Patrick Reynolds is met with in frequent conveyances of land in West Jersey and indicates that he was extensively engaged in buying and selling lands in the province.

He married Auslis Rushford in 1729, and at his death, which occurred in 1757, left six children, of whom only Thomas and Margrett were of age. Of the daughters, Margrett married John Bisham, Mary married John West, and Ann married William Ireton; the two others, Ruth and Lydia, possibly died young, as we find no record of their marriages or of any descendants.

Thomas Reynolds, who was born in 1731, married Elizabeth

¹ It was so named because it lay on both sides of the north branch of Rancocas Creek, the dividing line between the townships of Northampton and Hanover, and was a compromise between the two townships.

New Mills Forge

Budd, daughter of David Budd, in 1759. When the Revolution broke out, he was selected as a member of the Committee of Observation of Burlington County and later elected a deputy from that county to the Provincial Congress, which met at Burlington on June 10, 1776. He served in this Congress until after the adoption of the first State Constitution on July 2 of that year. He then became Lieutenant Colonel of the Second Battalion of Burlington County Militia. This was the regiment commanded by Colonel Charles Read, of whom more is given under Etna Furnace. After the defection of the latter, Reynolds was, by appointment of the Council of Safety, made Colonel on April 9, 1777. While home on a furlough he was captured by British troops and carried away a prisoner but was later released on parole and resigned from the Militia December 18, 1782. In 1781, he was tried before a general Court-Martial on a charge of "having refused to put in execution the sentence of a Court-Martial held in said County, by his appointment, to turn out on their tour of duty, agreebly to an Act" passed June 16, 1780. On this charge he was fined £15. After the war he took an active part in the civil affairs of the county, and among the other official positions which he held was that of a delegate to the State Convention of 1787 which adopted the Constitution of the United States.

His second wife, whom he married January 4, 1769, was Mary Ritchey Brian, widow of Jacob Brian. Of Mary Ritchey little is known other than that she came from Allentown, Monmouth County. Some writers have asserted that she was a direct descendent of Anna Ritchie, a niece of George Willocks, one of the prominent men of East Jersey, and one of his heirs. A careful examination of all the evidence fails to support this descent or to show that Thomas Reynolds obtained any substantial dowry from his last wife. At the time of his death, January 7, 1805, he had two daughters living, Catharine and Anastatia [Antis]. The former married Smith S. Osborn who died in 1803; Antis married General John Lacey and died in 1816. There is no record of a will of Mary Reynolds, from which it may be taken that she died before her husband.

General Lacey moved to New Mills, as Pemberton was then called, in 1781 or 1782, and between this and 1787, a forge called "New Mills Forge" was built. Lacey has been credited with building this forge, but it appears from later records that he had one or more associates in the enterprise. The sawmill and gristmill were built by Robert Smith, Daniel Smith, Patrick Reynolds, and David

New Jersey Forges and Furnaces

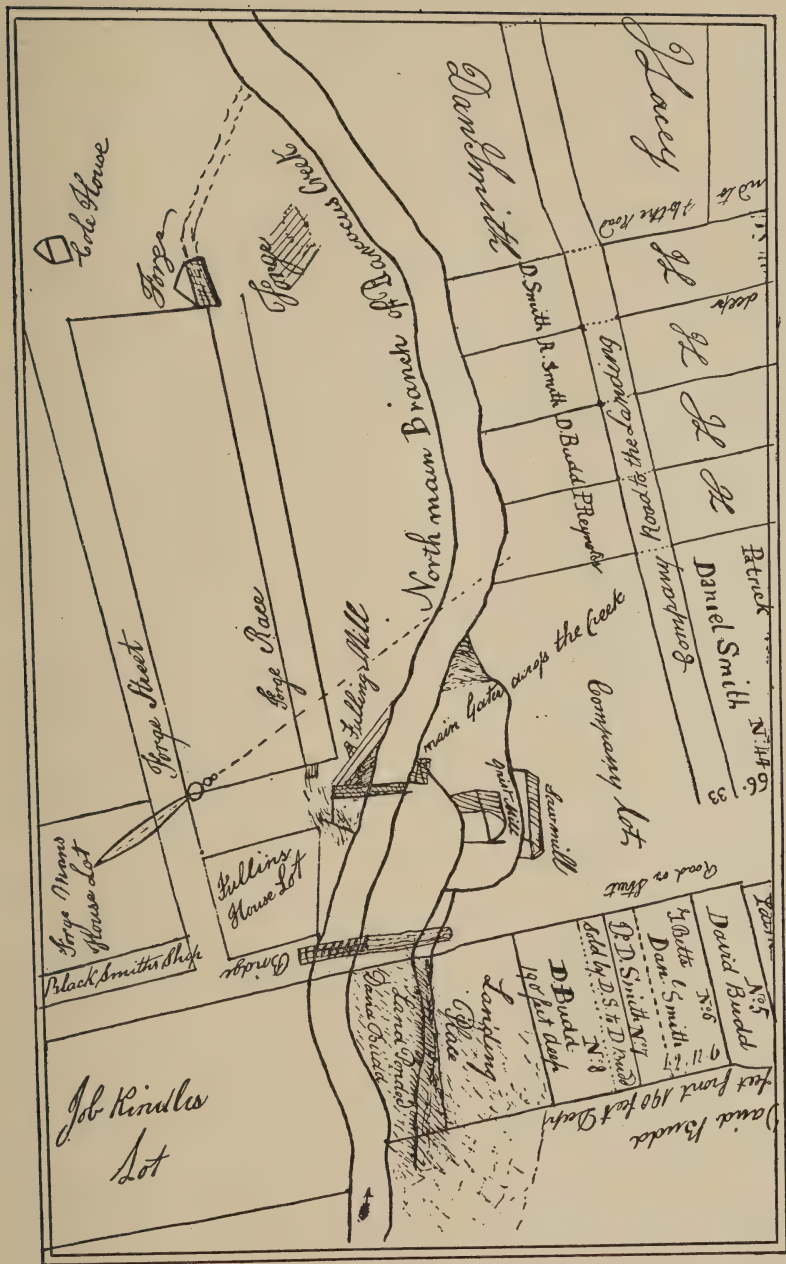
Budd, who were known as "The Company." The forges, for there were two of them, were built on the Company lands and were, no doubt, erected as part of the larger project to utilize the water power of the "Main North Branch of Rancocas Creek." While Patrick Reynolds died in 1757, his real estate was not divided until 1803. In this partition it is shown that Thomas Reynolds held five-eighths interest in the sawmill, one-half interest in the gristmill, and a one-half interest in the forge, all of which were located on a thirteen-acre tract of land west of the main street of Pemberton. These interests were awarded to Anastatia Reynolds Lacey, "together with the privilege of keeping the pond up to the usual height." The half interest in the forge came to Thomas Reynolds through his father, Patrick, and his grandfather, David Budd.

The location of the forges is definitely fixed through a map of New Mills (Pemberton) made in 1787, from which the portion shown on page 145 was taken. The two forge buildings were on the southerly side of Rancocas Creek about five hundred feet west of the highway leading into Pemberton. The water power to operate the forges was carried in a "forge race," which began just opposite the gristmill, and after leaving the forges again entered the creek a short distance below the flood gates. A "cole house" is shown on this map south of the forge buildings, while the forgemen's house and blacksmith shop were located south of the road running into the forge. Even to this day the favorite "swimming hole" of the youth of Pemberton is the pond above the flood gates, which they call "The Forgey." Opposite the gristmill was the company store which, in 1810, was kept by John Lacey.

In 1807, an undivided half of the property was offered for sale. It was described as consisting of "a Forge, Grist-Mill, Saw-Mill and Dwelling House, with Workmen's Houses, etc., together with the land and improvements belonging to the same—the works have lately been put in complete order." While the tax assessments were made in the name of John Lacey, Samuel E. Howell of Philadelphia appears to have had a joint interest in the property.

Between the years 1787 and 1802 the number of forge fires had dropped to one fire, but according to the tax duplicates for 1806, 1807, and 1808, they had increased to four fires.

It is not known how long this forge was in active operation, but in the will of General Lacey, made in 1811, he states that the New Mill Forge was closed, and he gives his son, Thomas R. Lacey, the teams and sundry other items which belonged to it, valued at \$1700. By the will of his mother, dated November 2, 1815, Thomas



NEW MILLS (PEMBERTON) FROM A MAP OF 1787

New Jersey Forges and Furnaces

R. Lacey was bequeathed, "all my real estate at New Mills, consisting of dwelling houses, barns, stables, out-houses, lot of land, shops, stores, grist-mill, saw-mill, forge, etc., together with the waters, mill ponds, dams, flood-gates, and all other real estate that I now own at or in New Mills."

The forge was not revived under Thomas R. Lacey. He did operate the gristmill and sawmill for some time but on September 8, 1817, conveyed a one-half interest in the entire property to Anthony S. Earl. Later the other half also came to Earl, who used the site of the forge for a sawmill.

Forge Street in Pemberton is a reminder of the days when a prosperous forge was conducted in the village. It was laid out in 1787, and definitely fixes the period when the New Mills Forge was established as above noted.

NORTON FURNACE

Hunterdon County

THE Norton Furnace was located on a small stream flowing into the Muthockaway Creek, about a half mile east of the Van Syckle's, or Union Church Mine, from which it no doubt got its ore. Much mystery attaches to the origin of this furnace, but it was probably one of the early enterprises of Allen and Turner—quite likely even earlier than the furnace which we now know as the Union Iron Works.

Acrelus says the Union Iron Works consisted of two furnaces and two forges. One of these was undoubtedly the same as is described under Union Iron Works, and this is probably the other one to which he referred.

In an advertisement that appeared in the *Pennsylvania Gazette*, March 12, 1767, mention is made of "the Old Union Furnace in the Jerseys." It is possible that this was really the first furnace at the Union Iron Works and that it had been abandoned sometime before the date of this advertisement, and a newer furnace erected.

The ore from the Van Syckle's mine, contained much titanitic acid, and must have proved quite refractory. As there were no other mines nearby from which to get raw material, this probably led to the abandonment of these works. On Faden's *Map of the Jerseys* published in 1777, Norton is quite prominently shown, while Van Syckle's, which was later a place of some prominence, is not designated, indicating that this was the more important at that time. The post office of Norton, which was established in 1877, took its name from the ruins of Norton Furnace.¹ These ruins are still visible (1929).

¹ J. P. Snell, *History of Hunterdon and Somerset Counties*, p. 514.

OXFORD FURNACE

Sussex County

now

Warren County

OXFORD FURNACE was considered a Philadelphia enterprise. It was located in what was then called the "Town of Greenwich," on a branch of Pequest Creek, and was built in 1742 by Jonathan Robeson of Philadelphia. The first pig iron was made at this furnace during the following year.

The Robeson family was one of the earliest to settle in West Jersey, where the several members took an active part in civic affairs. Andrew Robeson, Sr., and his nephew, Andrew, Jr., came to New Jersey in 1676, the uncle having purchased, while still a resident of Clonmel, Ireland, a full share of Propriety of West Jersey, in February, 1676-77. Andrew, Jr., settled on land in Gloucester county in the vicinity of Clonmel Creek, where several of his children, including Jonathan, the third son, were born. When Jonathan was twelve years old (1702), his father moved to Philadelphia, and in 1716 took up his residence near Amity in the vicinity of the Manatawny Creek, which joins the Schuylkill about thirty-five miles above Philadelphia. A few years later Andrew Robeson, Jr., became associated in the iron business with Thomas Potts, who had married his sister. The son, Jonathan, followed in the footsteps of his father and was given under the latter's will "One thousand acres of Land and Plantation whereon I now Live and all its Impertinences there unto belonging." He was thus well equipped to conduct the new furnace at Oxford, New Jersey, both from the point of experience and from the fact that he was financially able to carry it through.

During Jonathan Robeson's residence in Pennsylvania he was quite active in the politics of that state, serving as a member of the Colonial Assembly with William Allen from 1730 to 1738. In 1738, he was a member of the Court of Common Pleas. He retained his residence in Pennsylvania for several years after building the Oxford Furnace, since he is mentioned in a deed of 1747 as of

Oxford Furnace

Whitemarsh in Philadelphia County. Jonathan was a prominent member of the Society of Friends, and when he moved to Hunterdon County became associated with the Bethlehem Monthly Meeting, later known as the Kingwood Meeting. It is interesting to note that when this meeting was established, it was on the application of "The Friends of Great Meadows" (see Kingwood Forges). Several subsequent deeds describe him as of Kingwood and as living on premises offered for sale in Kingwood.

The original furnace had an eight-foot bosh and was thirty-eight feet in height.¹ The output was from thirteen to seventeen tons of pig iron weekly. The furnace consumed about 350 bushels of charcoal per ton of iron produced. Early in the nineteenth century larger bellows were introduced. In 1832, tub-bellows were installed increasing production still further and reducing the amount of charcoal necessary to smelt the iron.

In 1756, Jonathan Robeson offered several tracts of land in New Jersey for sale which he described as follows:

One other tract about 300 acres of land, lying between the Oxford furnace and the river Delaware, about three miles from the said river; and also the one undivided fourth part of the Oxford furnace, with all the land, plantations and improvements thereunto belonging, containing upwards of 4000 acres, together with the several Negroes, horses, oxen, cattle, teams, stock and utensils, whatsoever thereunto belonging; the furnace and ore are known to be very good, . . . Apply to the Subscriber at Kingswood.

Jonathan Robeson.

From this it is seen that Robeson, at that time, owned only a one-quarter interest in this furnace, the other three-quarters having been purchased in 1749 by Dr. William Shippen, Sr., who now obtained title to the balance and placed his son, Joseph W. Shippen, in charge of the estate.

Robeson, in the advertisement partly quoted above, also offered a two-thirds interest in the Changewater Forge, which was located on Musconetcong Creek about five miles from the Oxford Furnace.

One of the considerations in this sale was that Jonathan Robeson should receive annually one hundred tons of pig iron from Oxford Furnace "if so many are made there." This stipulation is confirmed in a supplementary partnership agreement between John Hughes and Jacob Starn dated April 9, 1762, wherein each party agreed to pay and discharge his share in the consideration money and par-

¹ J. B. Pearse, *History of Iron Manufacture*, p. 58.

New Jersey Forges and Furnaces

ticipate equally in the profits or losses. As the furnace would not make over 400 tons of iron a year it would appear that Robeson, deciding to quit Oxford, was willing to turn its entire management over to Dr. Shippen and take pay for his one-quarter equity in iron.

After Dr. Shippen had secured entire possession of the furnace he leased it to Jacob Starr, and it was referred to as "Shippen and Starr's furnace" in an advertisement in the *Pennsylvania Gazette*, September 2, 1762, concerning a public vendue of certain lands in Sussex County. It was clearly a typographical error in printing the name Starr for Starn, who was connected with Greenwich Forge, as already noted, and was at this time also operating Oxford Furnace, as shown by the following letter found among the *Durham Papers*.

Greenwich Forge, Sept. 12, 1671.

Mr. C. F. Oerter.

Sir:

I have the pleasure to inform you that we have made a blast at Oxford furnace by which means you may depend upon your order being completed.

I am sir, for Jacob Starn & Co.

Your humble servant.

P. Jones.

Subsequently the title to the property was in the name of Dr. William Shippen, Jr. and Nicholas Biddle. In 1764, it was offered for sale with about 4000 acres of land by Joseph Shippen in Germantown and Dr. Shippen in Philadelphia.

The next lessee was the firm of Roberdau, Showers, and Campbell, who for a number of years operated the furnace, being succeeded by Conrad Davis in 1806. In 1809, David Morris Robeson (he later dropped the David), grandson of Jonathan, purchased the works from the Shippen estate. He spent the summers in the old homestead, but later permanently moved to Oxford. Morris Robeson was also interested, as noted elsewhere, in Martha and Weymouth Furnaces. He took an active interest in civic affairs and became a judge of Sussex County, president of the County Agricultural Society, and was active in banking institutions. On his death in 1823, his widow, Tacy (sister of his partners, John and Joseph M. Paul) became his executor. In 1824, she endeavored to have the county seat of the newly formed Warren County established at or near Oxford. To this end, she publicly offered to give to the county two acres of land on the road leading to Bethlehem from Oxford Furnace, together with five thousand dollars in cash, payable thirty days after the completion of the public buildings, and "water for



FIRE BACKS FROM OXFORD FURNACE

Oxford Furnace

use of same, without expense forever; except of logs—or other means of conveying the water." The election which was held on the third Tuesday in April, 1825, however, declared in favor of Belvidere.

The works later passed to William P. Robeson and John P. B. Maxwell, his brother-in-law, who carried on the store; but the furnace had been out of blast for over twenty years.

In 1831, the furnace property was leased to William Henry, John Jordon, Jr., of Philadelphia, and John F. Walle, who after operating it for eight years, during which time they manufactured stoves, sold out to George W. and Selden T. Scranton. The Scrantons, with changes in the personnel of the firm from time to time, continued the business for many years, making pig iron which was chiefly used for car wheels.

The old furnace, which went out of blast in 1882, was rebuilt and ran until about 1925.

An interesting sidelight on the product of this furnace is a letter from an expert in the manufacture of steel, writing to Mr. Goddard's paper, the *Pennsylvania Chronicle*, April 6-13, 1772, in which he says:

I am fully convinced that the Iron made at the *Oxford* furnace in *New-Jersey*, (about 60 miles from hence) by far exceeds any other in *America* for the purpose of making Steel; and that, by a proper conversion, it will equal, if not exceed, any ever imported from the famous works of *Cawley*—at the same time, I must acknowledge, that several other kinds of Iron are extremely good for that use, particularly Mr. *Bird's*, of *Reading*, and that of *Batstowe* furnace in *New-Jersey*.

One of the products of Oxford Furnace was chimney firebacks, a number of which could until recently be seen in the old houses in northern New Jersey and New York State. They most frequently bore the English coat-of-arms, with "the lion and the unicorn, crest, crown and legend of the Garter," and were cast between years 1745 and 1758.² During the French and Indian War, cannon balls were cast at Oxford, and many imperfect ones have been found in the cinder dump.

Of Oxford Furnace, it has been said "it was one of the most important factors of the Revolutionary period, and the British were unable to capture it, although several expeditions were sent into northwestern New Jersey for that purpose."³

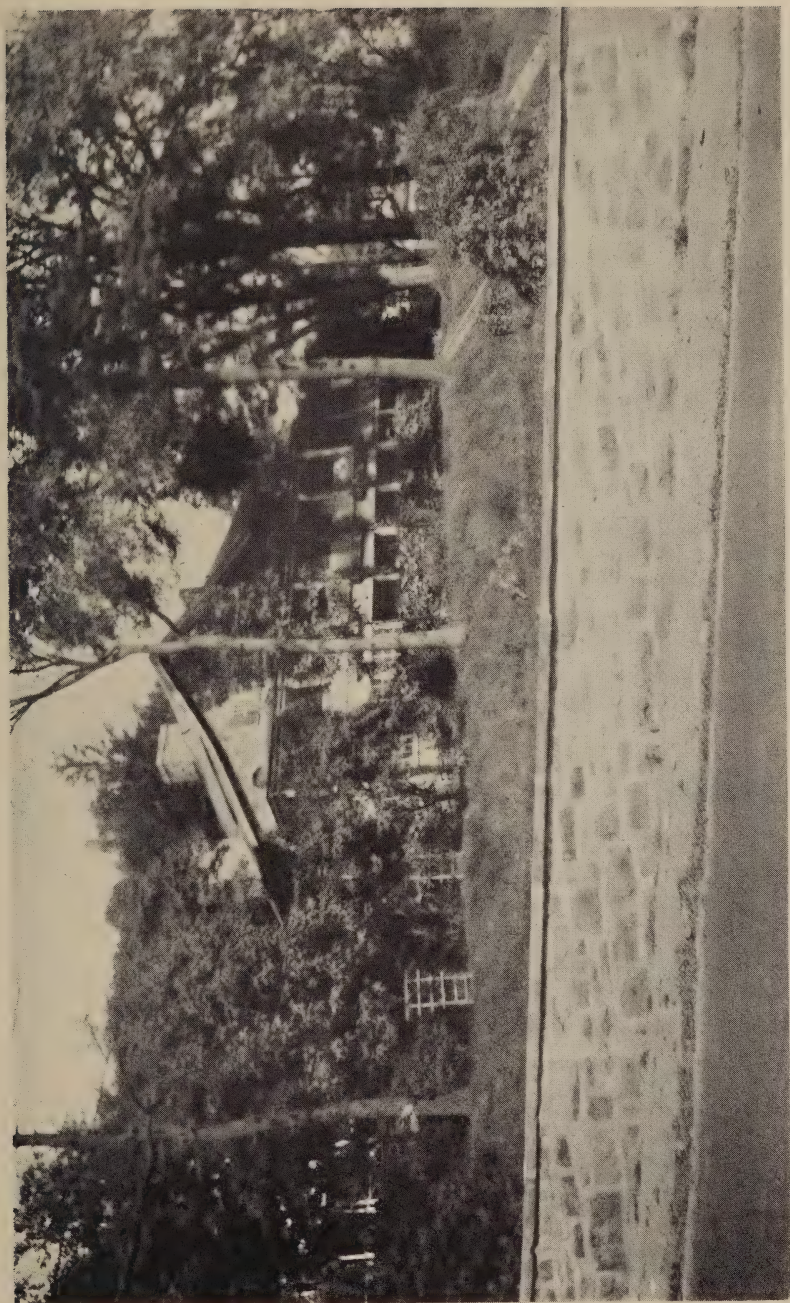
² H. C. Mercer, *The Bible in Iron*, pp. 66, 121, 122.

³ *Proceedings New Jersey Historical Society*, New Series, IV, 170.

New Jersey Forges and Furnaces

Some of the iron, not used by the forges in the vicinity or for chimney backs, cannon balls, oxen, mule-and horseshoes, wagon tires, nails and crude farming implements, in the form of pig iron or large square blocks for ship's ballast was carried to Philadelphia in the famous Durham boats. This iron was carted to the wharf at the Robeson Ferry just below Belvidere and loaded on boats which made the trip down the Delaware River to Philadelphia in about two days. It required at least five days of hard work at pole-pushing to make the return journey. At the time of the Revolution about forty of these boats were engaged in this traffic, and these were used by Washington and his men when they crossed the Delaware on the Christmas Night previous to the Battle of Trenton.

The old Shippen Manor, also known as the "Robeson House," the "Scranton House," and the "Fowler House," erected about 1750, was occupied by Joseph W. Shippen and his wife, Mary Axford Shippen, for thirty years, and is still standing as a fine example of early Colonial homes. After his death, which occurred in 1795, it was occupied by the successive lessees of the furnace. It was located on the old stage coach road between Scranton and New York, and the occupants were always in touch with the outside world. Joseph W. Shippen, or "Gentleman Joe" as he was known, was a true aristocrat, entertaining his weekend guests from Philadelphia and New York in lavish style and each fall inviting numerous friends for hunting parties. He was paymaster at the Bethlehem Army Hospital during the Revolution. The close relationship of the Shippens with the most prominent families of New York and Philadelphia brought to the old house many of the foremost personages of the times. Dr. William Shippen, Jr., who was Chief Physician of the Flying Camp and Director General of Hospitals of the Continental Army, frequently visited his brother Joseph. Benedict Arnold, who married Joseph's cousin, Peggy (Margaret) Shippen, is also said to have visited Joseph Shippen on several occasions.



THE SHIPPEN MANOR

POMPTON FORGE AND FURNACE

Bergen County

now

Passaic County

THERE is much uncertainty surrounding the origin of an iron works of any kind at Pompton. The earliest notice located of such a works is in a survey made in 1726, but so far all efforts to ascertain the name of the owner have failed. The next mention is found in the *Bergen County Roads Book B*, p. 29, under date of May 27, 1767. From the abstract of this return made by William Nelson¹ we quote as follows:

Surveyors "called to lay a road between the Roads that Lead from Pompton Forge and from Morris Town to Ringwood & Charlotteburg Iron Work[s] have laid a road beginning etc. etc. etc. to the Road that leads from Pompton Forge to Ring Wood; . . ."

From this it will be seen that the forge was then in existence. Dr. Tuttle says that Peter Hasencleaver, after completing the purchase of these forges and tracts of land at Pompton, Ringwood, Long Pond, and Charlotteburg, at once began to enlarge the old works and build new ones at each of the places just named. On the other hand, in the report made to Governor Franklin by Lord Sterling, James Grey, Theunis Dey, and John Schuyler in 1769, no mention is made of either a forge or a furnace at Pompton, although they state that their survey included all the works "within this province so far as they have been shown us." Furthermore in none of Erskine's papers has any reference been found to the Pompton Forge or Furnace. It is quite evident that the Pompton Forge was not one of the London Company's projects. In 1816 it was conducted with Ringwood Furnace by Martin I. Ryerson,² and an entirely new furnace was built in 1837.³

¹ William Nelson, *Passaic County Roads*, p. 18.

² C. D. Platt, *Dover History*, p. 511.

³ J. L. Bishop, *History of American Manufactures*, I, 543.

THE CHARLES READ ENTERPRISES

THE several furnaces and forges in which Charles Read was the moving spirit were so closely affiliated that it is almost impossible at this late day to discover their separate activities. Aside from the small plants at Bordentown and Mount Holly, the beginning of the manufacture of iron from bog ore in South Jersey may be said to have had its greatest impetus shortly after Charles Read offered for sale several parcels of land which he owned in that region. This advertisement read in part as follows:¹

As Iron Works where the ore is good and the carriage easy, with sufficient wood and water, are esteemed as valuable and permanent estates as any in America.

CHARLES READ of Burlington, gives notice to the public, that he is possessed of several tracts of land, having in them streams of water, as constant and governable as can be wished, and the following conveniences;

- (1) A PLACE for a furnace, remarkable and advantageous in situation, the stream sufficient in the driest time. Two stone hills at two miles distance from the place for erecting the furnace. Ore sufficient, to be drawn at three miles and an half, and flux if wanted easy to be come at: The portage to his landing on the side of the south west branch of Ancocas five miles and an half: And to this work he will allot the Coal Wood of eight thousand acres of land, and if that is not esteemed sufficient he will add more.

(This was undoubtedly the site on which the Taunton Furnace was built within the next three years.)

- (2) A place for a forge on a plentiful and steady stream thought sufficient to carry four bellows and two hammer wheels not three miles from the furnace, which will have great command of wood, and not interfere with the furnace tract, the portage from the forge nearly the same as from the furnace; this work will be within twenty miles of Cooper's ferry, opposite Philadelphia, a boat comes up within 2 & 1-2 miles of the furnace and forge, and carries equal to eleven tons of iron down the stream, and has done it in June, 1765, although the season is dry and the boat not well constructed for the purpose; an offer has been

¹ *Pennsylvania Journal*, July 25, 1765.

Charles Read Enterprises

made to clear out the creek, so that she may perform it at all times, for Fifty pounds.

(This was probably the later location of the Etna Furnace.)

- (3) Another place for a forge or bloomery, with four fires and two hammers: The stream esteemed sufficient all the year, and in winter it has water to spare: The cartage of the ore one mile or thereabouts: To this work will be allotted the Coal Wood of four thousand acres, and more may be had: The cartage of the iron eleven miles to a cheap water carriage to New-York or Philadelphia.

(This seems to agree with the place where the Atsion Furnace was built.)

- (4) Another constant stream capable to drive four bellows and two hammer wheels, where also a furnace may be erected, the ore very handy and a scow of ten tons may come to the works and carry the produce two miles to vessels frequently going to New-York, New England, and Philadelphia: To this work will be allotted the Coal Wood of eight thousand acres; It is thought the ore may be raised for one shilling a ton, and that a team of six oxen will draw two tons, as the roads are good and country level.

(The last corresponds to the Batsto Furnace lands.)

The advertisement says that actual experiments had been made of converting the ore into iron, which has been pronounced by two experienced ironmasters entirely satisfactory. Read gives as his reason for selling these lands the great expense necessary to conduct the proposed enterprises and his inability to give them proper supervision. He, however, reserves in the sale "a share of the produce," or offers "to enter into partnership with any persons of good dispositions, fortune and integrity."

Read began acquiring land in this part of Burlington County about 1751. His first warrant from the Council of Proprietors of West Jersey was dated April 9th of that year, and called for 3750 acres, as part of the fifth dividend on his shares of propriety. The survey for this tract is dated August 4, 1756.² He had three years previously, however, actually taken up some smaller tracts, and on April 9, 1754, there is recorded a survey of 1725 acres of land on Batsto Creek, the rights to which he had purchased from Thomas Gardiner.³ By a deed, dated January 25, 1755, John Childs and his

² S. S. O. *West Jersey Deeds*, Liber L, p. 565.

³ S. S. O. *Basse's Book of Surveys*, p. 281.

New Jersey Forges and Furnaces

associates in the West Jersey Society, through their attorney, Lewis Johnston, conveyed to Charles Read of Burlington, for a consideration of £48, 800 acres of unappropriated land. A transaction which is of particular interest is the 999 years lease made by Thomas Gardiner and Daniel Ellis for five shillings and a yearly rental of £4/10/0, covering 1128 acres lying on a branch of "Mullekey's river" called "Meschescatuckzing," these streams being the present Mullicas River and Maschesautuxen Creek.

Prior to putting out the advertisement, Read had evidently made well-matured plans for each of these tracts of land. According to an agreement dated July 5, 1765,⁴ between himself and David Oliphant of Evesham, provision was made for the erection of a dam on Batsto River "below a Bridge known by the Name of Braddocks Bridge where he hauled logs out of the Pines to Gosling's Mill," in order "to accommodate Two forges or Iron Works purposed to be erected." This was three weeks before he inserted the above quoted advertisement and only a few weeks after the Legislature had given John Estelle and Charles Read permission to dam this stream. It is quite likely that the real purpose of this public notice was to enlist capital for carrying out the projects.

That Read had earnest intentions of having the several ironworks built is evidenced by the petition which he and Peter Bard presented to the Governor and Council of the General Assembly in 1765, asking them not to permit the granting of any licenses for any tavern or house of public entertainment within three miles of any ironworks erected within the Province, without a recommendation to the Justices at their Sessions first obtained from the owners of such works, or the major part of them, and that "all debts above five shillings contracted at such Tavern on any pretense whatsoever shall not be Recoverable."

It was not until 1769, that any action was taken on this petition. At that time the owners of ironworks in Evesham and Northampton townships in Burlington County were granted permission to furnish persons actually in their employ "Rum, or other strong Liquor, in such Quantity as they shall from Experience find necessary, and that if any other Person or Persons, residing within Four Miles of said Works, or any of them, shall entertain, in or about their House, in Idling or Drinking, or shall sell any strong Drink, to any Wood-Cutter, Collier or Workman employed at said Works" the offender should be subject to a fine of ten shillings for every offense and the money so collected should be paid to the overseer

⁴ S. S. O. *West Jersey Deeds*, Liber U, p. 364.

Charles Read Enterprises

of roads nearest the works to be used in the repair of the public roads.⁵

Finding no purchaser for the tracts, Read and several associates began erecting a furnace on one tract, a forge on another, etc. Before meeting with financial reverses he had carried out the entire scheme. He had set in motion an industry which was to extend over a period of eighty years and transform an almost untrodden forest into a hive of industry.

Soon after the opening of the nineteenth century a considerable impetus was given to the bog-iron industry. Many acres of land in the "pine belt" of West Jersey, which offered suitable sites for a furnace or forge were bought by speculators and those intending to embark in the industry. One advertisement of such a tract will give an idea of the elements which the iron manufacturer considered essential for works of this kind.

FORGE SEAT,

For Sale, a very convenient and valuable seat
for

A FORGE, SAW & GRIST MILLS,

SITUATE in the township of Little Eggharbour, county of Burlington, and state of New Jersey, on the mail stage road leading from Tuckerton to the city of Philadelphia, within 6 miles of the former and 44 from the latter, on the head waters of Bass river. On this seat there is at present a good saw mill which cuts from two to three hundred thousand feet per annum, within two miles of which, vessels of 60 tons burthen can load and depart—and with little expense, the navigation may be cleared so little scows (carrying 10 tons) can come within a quarter of a mile of this forge and mill seat.

There is belonging to the estate, wood sufficient, within 5 miles of the seat to last a Forge with 4 fires and 2 hammers for 40 years, besides a great quantity of saw timber suitable for boards and scantling.

In the neighborhood of this seat there are several furnaces which make pigs, excellent for bar iron, that can be brought to the forge hammers with a trifling expense—these advantages, together with the water carriage from this seat direct to any port in the union, will not be overlooked by the man of business. This convenient stand and valuable seat is an object worthy the attention of any gentleman acquainted with the iron work business and will be sold a great bargain, a liberal credit given for a considerable part of the purchase money, and a clear and indisputable title made to the purchaser. As it is presumed no gentleman will purchase until

⁵ *Session Laws of New Jersey*, 1769, Chapter XIX, p. 109.

New Jersey Forges and Furnaces

he views the premises, a further description is thought inexpedient.

Those inclined to purchase will please apply to Capt. Henry Manly, merchant, No. 13, North 4th street, Philadelphia, or the subscriber at his residence in Tuckerton, New Jersey.

EBN. TUCKER.

Tuckerton }
October 21, 1805 }

Duane's Aurora and General Advertiser, January 16, 1806.

The life story of Charles Read is interesting but ended tragically. He was the son of Charles Read, a prominent merchant of Philadelphia. Born in 1713, after a liberal education under private tutors he was sent to London, where he became acquainted with Sir Charles Wager, one of the Lords of Admiralty, by whom he was appointed a midshipman in the English Navy. On one of his cruises to the West Indies, he fell in love with Alice Thibou, the daughter of Jacob and Dorothy Thibou of the island of Antigua.⁶ Resigning from the Navy, he was soon married and then began his preparations to return to America. In order that he might pose as a rich merchant, his father-in-law presented him with thirty-seven hogsheads of rum and had many more consigned to him later. About 1739, he first appears in the political life of New Jersey as clerk of Burlington, and not long afterwards was made Collector of the Port at Burlington. He later became deputy secretary of the Province, a member of the Assembly, a member of the Council, and a Judge of the Supreme Court (for a time Chief Justice). He was an outstanding leader and from 1741 to 1771, according to Aaron Leaming, had almost absolute rule over Governors, the Council, and the Assembly, except during the short administration of Governor Thomas Boone.

He was industrious to a fault, but always full of schemes and whimsical almost to the border line of insanity. Aside from the prominent part he played in the politics of the time, he possessed an extreme desire to become the greatest ironmaster of the Province. His interests were so diversified and extended that it would have been physically impossible for any individual to have carried out all of them successfully. The result was that by 1773 he had become so heavily involved and his health so undermined that he was forced to go away, leaving his affairs in the hands of trustees as can be seen in the following notice:

⁶ In the will of Alice Thibou Read, dated February 8, 1769, James and John Pemberton, merchants of Philadelphia are mentioned as cousins; bequests are made to her sons, Jacob and Charles, and to her grandson Charles.

Charles Read Enterprises

Philadelphia, June 30, 1773.

WHEREAS CHARLES READ, Esq; for the recovery of his health, as well as for securing and recovering some large sums of money due to him in the West-Indies, has lately embarked thither, and, being desirous of preventing any uneasiness among such as he may owe money to, has appointed us, the subscribers, trustees, to make sale of such parts of his estate, as may be necessary for the discharge of his debts, which we propose to do as soon as possible. We, therefore, desire all persons who have any demands against him to bring in their accounts, properly proved, that they may be settled; and all who are indebted to him, by mortgage, bond, note or book-debt, are desired immediately to discharge their respective debts to the subscribers, who are authorized to receive the same.

Daniel Ellis, at Burlington
Charles Read, junior; Aetna Furnace
Thomas Fisher, Philadelphia.
Pennsylvania Gazette, June 30, 1773.⁷

Read went to North Carolina and located at Martinburg on Tar River, twenty miles from Bathtown. Here he was keeping a small shop and was in almost destitute circumstances at the time of his death on December 27, 1774.

Colonel Read (1739-1783), who accepted the protection of the British, which act for many years was ascribed to Colonel John Read, Washington's first aide-de-camp, was the oldest son of Charles Read, the jurist and ironmaster. He was interested with his father in the ironworks and is the "Charles Read, Junior; Aetna Furnace," mentioned in the above advertisement.

Governor Livingston, writing to the Legislature on March 15, 1777, said, "Colonel Charles Read, of one of the Burlington battalions, is in such a situation with respect to his having submitted to the enemy, that it is not probable he will act any longer in that office."

Charles Read, Jr., was taken prisoner at Crosswicks in January, 1777. Christopher Marshall in his *Diary*, under date of January 21, 1777, records: "It's said that several hundred soldiers arrived in town from the lower parts of this Province and Maryland, and that several more Tories are brought in this day from the Jerseys, among whom is Col. Charles Read." Judge Read's other son, Jacob (1741/2-1783) does not appear to have been connected with his iron industries.

⁷ See also *Pennsylvania Magazine of History*, XVII, 192.

New Jersey Forges and Furnaces

We will take up Read's enterprises in the order in which they appear in his advertisement of 1765 as follows:

Taunton Furnace
Etna Furnace
Atsion Forge or Works
Batsto Furnace

TAUNTON FURNACE AND FORGE OR TANTON OR TINTERN FURNACE

Burlington County

Taunton Furnace was located in old Evesham township (now Medford) on what is now called Haines Creek, but was formerly known as Read's Mill Creek, or Catoxen Creek, a stream flowing into the south branch of Rancocas Creek, about eleven miles southwest of Mount Holly and three and a half miles from Medford. This furnace was started by Charles Read in 1766-67. On Faden's *Map of The Jerseys*, published in 1777, it is shown as "Read's Mill."

It was in active operation in 1768, when Charles Read advertised for three indentured servants who had "run away from Tanton Forge." In the following year "Colliers and Forge men" were wanted, the former to begin work by March 10th.

About 1770 Read's financial difficulties began to loom up and he tried to sell his various ironworks. He claimed that, because of the location of Taunton (Tanton) Forge, it had the advantage of many hundred pounds a year over works further back in the woods. The cost of transportation of iron to Philadelphia was only ten shillings a ton.¹

Read did not sell his works, however, and it became part of the estate which he turned over to his trustees, who three years later advertised it for sale, giving a detailed statement of its equipment and location, which at that time was leased to Isaac Evans.²

¹ *Pennsylvania Journal*, October 11, 1770.

² This tenancy is shown in the *Minutes of the Supreme Court*, September term 1773.

Charles Read Enterprises

TANTON FORGE

To be sold that valuable FORGE called TANTON, with a TRACT of LAND belonging thereto, containing about 1500 acres, the greatest part of which is well timbered; it is situated in Burlington county, West New-Jersey, about 16 miles from Philadelphia, and about six miles from a landing on Ancocus Creek: There are on the premises a small furnace with bellows, &c compleat; the forge has three fires in good order, and are both on an excellent stream of water.—There is also a good Dwelling House, with other convenient out-buildings, for the workmen, and a coal-house that will contain 400 loads of coal—About 15 acres of land cleared, on part of which is a young orchard, and a considerable quantity of meadow may be made at easy expense.

With the forge will be sold, the Privilege of getting Iron Ore, which may be had in great plenty, within about three miles of the forge, and also the privilege of getting wood off of sundry tracts of land adjacent.

Any person inclined to view the premises may apply to CHARLES READ, jun. at Etna, who will also inform them of the terms, or to DANIEL ELLIS, Esq; at Burlington; or THOMAS FISHER, at Philadelphia.

Pennsylvania Journal, August 25, 1773.

When the Hessians and British occupied Mount Holly in the latter part of 1776, Thomas Maybury moved to Taunton where, according to tradition, which is verified by a subsequent advertisement, cannon and shot were made for the Continental Army. He continued to operate the Taunton Furnace until 1784, when he decided to move from the state, and offered the works for sale. In the advertisement of the works³ it is described as consisting of a furnace with a capacity for making 80 tons of pig iron a month; a forge with three fires, which has lately been repaired, adjoining the furnace; a sawmill, adjacent to the works; and also a one-eighth interest in Prickett's sawmill,⁴ distant about a mile and a half from the works.

Among the advantages claimed for the works were the fact that it was situated on a never-failing stream of water, that the iron ore lay so near that a team could haul three loads a day, that the metal was equal to any on the continent for making hollow-ware, pig iron, and "especially cannon, of which sufficient

³ *New Jersey Gazette*, May 3, 1784.

⁴ Prickett's Mill was located near the intersection of the old road from Camden to Little Egg Harbor, and the Burlington-Great Egg Harbor road. It was about two miles from Atsion and a place of some importance in the early days. The name is derived from Joseph Prickett, its builder. It was later known as Haines' Mill.

New Jersey Forges and Furnaces

has been given," and that the wood tract was so near that one team could haul six loads a day. The expense of conveying iron to Philadelphia was only twelve shillings a ton, a navigable creek being near to the works.

The property was sold to George Hastings for £2000, the deed being dated July 11, 1785. The purchaser not having carried out his bargain, Maybury was forced to obtain judgment against him, and the furnace tract was sold by John Hollinshead, Sheriff, in 1789, to Thomas Reynolds and Richard Edwards⁵ "as tenants in common" for a consideration of £530.⁶ Soon after this Edwards became sole owner and was followed by his son Mark and Anthony Sykes Earl. On an old map, dated January 22, 1795, Taunton Furnace and its dam are shown surrounded by seven houses,⁷ apparently for the workmen. This map was made in connection with a partition deed of some adjoining property, the interesting part in the deed being that the land was originally taken up by David Oliphant who was associated with Charles Read at Batsto, at least to the extent of joining with him in an agreement to build a dam over Batsto River in 1765. On the map the "Road to Taunton Furnace" and the "New Road to Atsion" are indicated.

Earl turned the operation of the works over to Benjamin Davis. Mr. Walter Cox of Haddonfield, N. J., has in his possession an old invoice for bar and "scollopt" iron sold by Benjamin Davis of Taunton Forge, dated September 6, 1804, and also several from the Taunton Company, dated in 1815 and 1816. Jesse M. Christopher became the next owner and in 1822 offered the entire tract for sale.⁸ At that time, Taunton consisted of about 8500 acres of oak and pine timber land on which was located a forge with two fires and one hammer and a furnace stack. Sometime after 1827, Jesse Varney took title, but of his activities nothing is known. In 1830 Cox, Longworth & Co. became the owners and were, apparently, the last to operate the works, which at that time included about 6000 acres of land. About seventeen years later, Joseph Hinchman bought the mill pond and adjacent property and converted it into a cranberry bog.

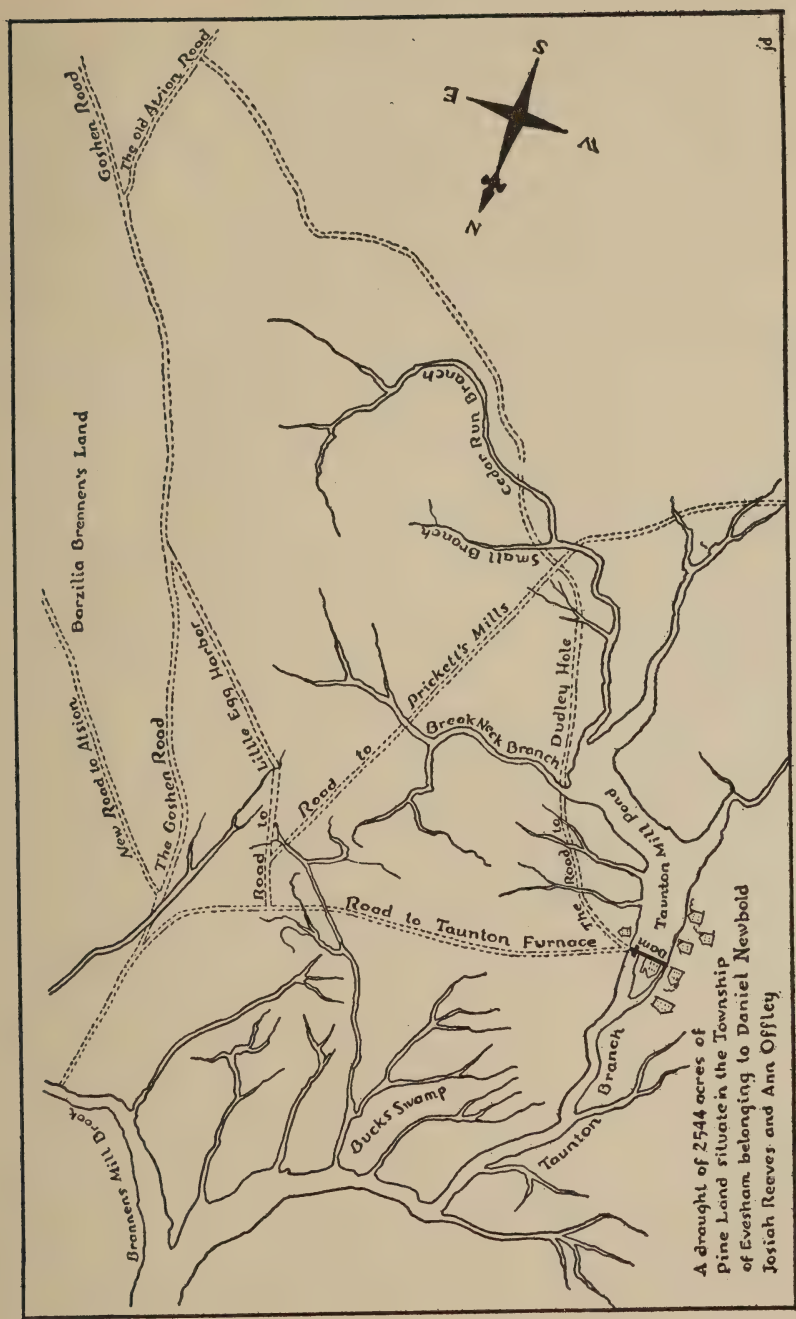
The old water power and raceway, which can still be traced,

⁵ Richard Edwards married Abigail Harrison, daughter of Samuel Harrison and Abigail Hinchman Kaighn of Gloucester. They had ten children, all of whom died single, excepting Samuel, who married Martha Heulings, and Sarah, who married Joseph Collins. Abigail Kaighn Harrison, the mother-in-law of Richard Edwards, died at his home at Taunton Iron Works in 1795.

⁶ *Burlington County Deeds*, Book C, p. 12.

⁷ *Ibid.*, Book D, p. 194.

⁸ *Trenton Federalist*, September 16, 1822.



SITE OF TAUNTON FURNACE, 1795

New Jersey Forges and Furnaces

definitely fix the location of the Taunton Furnace, and around the site of the old water wheel, which was in existence a few years ago, can be found, even today, quantities of slag. An old crucible ingot—or a “salamander,” was recently found near the site of the old forge.

ETNA (ÆTNA) FURNACE

Burlington County

Charles Read in 1766–67 built the second of his projected iron-works, which he named Etna Furnace, on a tributary of the southwest branch of Rancocas Creek. It was located a little south-east of the center of the present Medford township and about ten miles from Taunton. The furnace was in full swing during the following year, as indicated by the following newspaper notices:

At Etna Furnace, in the County of Burlington, good Colliers, two good Carpenters, a good Smith that understands the making of flatt or padd iron handles, a Stone Cutter, a person used to grind flatt irons and waggon boxes, will meet encouragement.

Pennsylvania Journal, March 3, 1768.

On November 8, 1768, Read published a notice about several servants that had run away, and at the end of the advertisement he added the following:

. . . Wanted at said Furnace, a good Keeper or person accomplished in Castings, and a middle aged Woman not subject to Liquors; fit to be entrusted with the Care of a large Family but not to Cook.

New York Gazette or Weekly Post Boy, November 21, 1768.

This furnace as well as Taunton Forge was active during the following year, as is shown by the need of various kinds of labor. Beginning with an announcement early in 1769, we can follow the workings of the plant during the blast fairly accurately. Other announcements appeared as follows:

AT ETNA Furnace, *Burlington County*, which will begin to be in Blast the Middle of April, are wanted, a good Keeper, two Master-Colliers, Moulders and Stock-takers: Those who apply in Season, and come well recommended, will be en-



FIRE BACK FROM ÆTNA FURNACE

Charles Read Enterprises

couraged. The Wood should be running in February, or beginning of March.

New York Gazette or Weekly Post Boy, January 23, 1769.

GOOD COLLIERS and FORGE MEN, bringing recommendations, and a good KEEPER, will meet with encouragement at Etna Furnace and Tanton Forge, in Burlington county, sixteen miles from Philadelphia. The COLLIERS should be there by the 10th of March.

Pennsylvania Journal, February 9, 1769.

In connection with this furnace was a gristmill erected expressly for the purpose of supplying "Persons and Teams necessary at the said Works" and a store kept for supplying the workmen and laborers of the ironworks only. So long as the mill did not charge for grinding or making flour for shipment to other localities, and the store adhered to the policy of meeting the requirements of the local workers only, they were, according to a law enacted in 1769,¹ free and exempt from tax, provided they did not dispense strong liquors at a greater price, quality considered, than ordinarily charged at other places in the neighborhood.

Later Read felt the need of disposing of his various holdings and inserted a long advertisement in the *Pennsylvania Journal*, October 11, 1770, from which is gleaned the best description of the location and equipment of these works. The plant was about nineteen miles from Philadelphia and seven miles from the present landing on Rancocas Creek, although a new one could be made only five miles away. The land carriage to reach shipping going to New York was seventeen miles. There were nearly 9000 acres of well wooded land connected with the furnace, ensuring an ample supply of charcoal for many years. On the property was a stamping mill, gristmill and sawmill, the latter for several years past being under "a rent of near £200 per year." Read stated that there was "a variety of nice patterns and flasks for casting ware" in the furnace, "for which, as well as bar iron, the metal of this works is very fit, and is in very high esteem at foreign markets, as will appear by the account of sale." As already noted, among the articles made at this plant were sad irons, and the advertisement calls attention to the "convenience therein to grind and polish iron ware by water."

No sale having taken place, Charles Read, the younger son of the founder, continued the works, and in all of the papers relating to the assigned estate of his father signs himself as "at Aetna"

¹ *Session Laws of New Jersey*, 1769, Chapter XIX, p. 109.

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(note the change in spelling). According to Judge Clement, Charles Read, Sr., conveyed to his son Charles Read, Jr., an interest in the Etna Works on April 1, 1773 "in consideration of stock and wages due him as manager, amounting on May 25, 1769, to £240." In 1773 and 1774 Read was assessed for a three-fire forge, and in the next assessment Jonathan Merryman was taxed for the same forge, probably as tenant. The property subsequently passed to William Richards of Batsto, who held title to the works when it was finally abandoned.

The son, Charles Read, Jr., in the latter part of 1774, disposed of two of the negro slaves as follows:

TO BE SOLD, BY
CHARLES READ,
At AETNA, West New-Jersey,
TWO FORGE NEGROES,
One a good Finer, and the other a good Hammer-man.
Pennsylvania Gazette, September 21, 1774.

Little is known of the later life of Charles Read, Jr., other than that he lived in Evesham, probably on part of the original Etna lands. He died in 1783 and in his will he disposed of two sawmills and a gristmill, but no mention is made of any ironworks interests. He mentions his wife Ann, his sons Charles and William Logan, and his daughters Alice and Elizabeth. All of these children were minors at the time of his death. His Quaker teachings are clearly shown in that he directed that his Negro Rachel should be set at liberty as soon as possible and that his three Negro boys should obtain their freedom at the age of 21, and in the meantime were to be bound out either in Pennsylvania or New Jersey.

The site of the old Etna Furnace can be definitely located by the dam, which has been recently raised and refaced, and also by the adjacent slag heaps in which old cannon balls and large pieces of pig iron have been found from time to time. The rebuilding of the dam has made a large pond above it, which has been named Aetna Lake. After the furnace was abandoned Shinn Oliphant built a gristmill and a sawmill on the same water power, which, in 1790, he transferred to Thomas Ballingee (now Ballinger), the progenitor of this family in Burlington County.

The foundations of the gristmill are still visible. These mills were known as Aetna Mills or Ballinger's Mills. In a Burlington County collection of old coins and paper currency is a ten-cent due bill

Charles Read Enterprises

issued by Joseph E. Ballinger dated "Aetna Mills, N. J. July 4, 1862."

The property is now being developed as a summer colony under the name of Medford Lakes. In a few years its old name will be entirely forgotten and every vestige of the old mills removed.

ATSION FORGE OR IRON WORKS

Burlington County

Atsion Forge was located on the Atsion River, or as it was called by the Indians, Atsayunk, or Atsiunc Creek in the southern part of the present township of Shamong, originally part of old Evesham township. The river at this point forms the boundary between Atlantic and Burlington Counties. The site was just east of the present dam over the river.

On June 20, 1765, John Estelle had obtained permission from the General Assembly to erect a dam across Atsion River, his purpose being to provide power for a sawmill as well to be able to float logs down to the mill from the upper stream. The act directed that the dam must be located below the "uppermost fast landing," known by the name of "Shingle Landing," and also that "Ways be made through the said Dam to admit Rafts to pass." Soon after this Read acquired the Estelle tract and, with some associates, built a forge on this water power in 1767-68, the pig iron being sent from Batsto to be converted into bar iron, which, so far as can be learned, was the principal product of the works during its early operation.

Three years later Read announced in the *Pennsylvania Journal*, October 11, 1770 and January 17, 1771, that because "he is very infirm, and not able to stir much," he desired to sell his one-half interest in these works, called Atsion Forge or Bloomary. It then contained four forge fires and two hammers, together with all the necessary buildings. He also stated that "there are at the works several servants and negroes who understand different branches of the business." These works being not far from Taunton Furnace, one manager, clerk, carpenter, and smith would suffice for both plants. The cost of transporting the finished products to Philadelphia was seventeen shillings a ton and to New York fifteen shillings a ton.

From this advertisement we learn that Read had only a one-half

New Jersey Forges and Furnaces

interest in Atsion. The other owners were David Ogden of Essex County and Lawrence Salter. After a few years Ogden sold his interest to Salter and on March 16, 1773, [S. S. O. *Deed Books* AH, p. 95; AG, pp. 262, 264 and 267] Read disposed of his part to Abel James, Henry Drinker, John Drinker, Jr., and Lawrence Salter. Apparently James and the Drinkers did not want to be known as part owners of the works for several years after their purchase. The tax assessments of Evesham township for the year 1773 show Lawrence Salter as the owner of a forge and sawmill for which he was taxed £3/17/1, and in the following year he was listed for a furnace, forge and sawmill on which he was assessed £8/8/7. In 1779, his name again appears among the taxpayers, being assessed on 3000 acres of unimproved land, a forge, and three sawmills, and the next year for the same quantity of land, a forge, and two sawmills. Lawrence Salter died in 1783, and his heirs were his brothers, Joseph and John Salter, his sister Sarah, wife of Robert Hartshorne, and the children of his deceased sister Lucy Hartshorne—Lawrence, Thomas, and John Hartshorne. Richard Salter, another brother, conveyed all his rights in the estate of Lawrence, deceased, to John Salter. Joseph appears to have managed the Salter interest on behalf of the family after the death of Lawrence, and in 1795 was assessed for the Atsion Works, which then contained four forge fires, but during the next two or three years only three fires were taxed. In 1802, William Salter was taxed, although the works had been for many years carried on as The Atsion Company, composed of Henry Drinker, Joseph Salter, and John Drinker.

When the capacity of the Pennsylvania Salt Works at Toms River was increased, Lawrence Salter and Co. were given the contract for furnishing the additional evaporating pans for which they were paid by the Board of War in February and March, 1777, £1045/11/4.¹ There is also an entry in the minutes of the Council of Safety of Pennsylvania authorizing the payment of £600 to Joseph Salter² which was also probably on account of this contract. It is probable that the one hundred and seventy camp kettles which the Council of Safety of Pennsylvania purchased from James & Drinker in February 1777 for Colonel Miles' battalion at Marcus Hook, at a cost of £36/14/0 were made at Atsion.

According to a letter from Joseph Ball to Owen Biddle of the Committee of Safety of Philadelphia, the Atsion Works in 1776 took an order to supply the ships of the Pennsylvania Navy with

¹ *Pennsylvania Archives*, Second Series, I, 22, 40.

² *Minutes of the Provincial Council of Pennsylvania*, XI, 118.

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iron. It is not known whether this iron was delivered in the form of spikes, bars, or other ship-building parts or as cannon and cannon balls.

For many years there was constant friction between William Richards of Batsto and the Atsion Company, and the court records show numerous lawsuits on their dockets in which one or the other was the complainant. Their difficulties were finally submitted to a board of arbitrators composed of Elijah Clark, John Gauntt, Joseph Willcox, Lewis Darling, and John Lacey. The arbitrators on January 23, 1793, filed an award whereby the Atsion Company was entitled to the timber on certain tracts, the Batsto Works was given the ore rights on the Estelle tract, and both works were given free use of the Atsion River.³

After the Atsion Company had bought some land of Josiah Foster in 1786, a canal was dug from the Machesautuxen Creek to Atsion River a little above the ore lands belonging to the Batsto Furnace, in order to get a greater head of water over the dam from which Atsion forge obtained its power. Whenever the flood gates were opened the lands below the dam were inundated and the ore diggers were forced to stop work, in consequence of which Batsto Furnace had no raw material. This led to a second lawsuit which was before the Chancery Court for seven years.⁴

The title to the property appears on the tax list of 1809 in the name of the Atsion Company, when it was assessed for 1000 acres of improved land, 3000 acres of unimproved land, one sawmill and four forge fires, and paid a tax of £6/4/5.

The Drinkers, as we have seen, were actively interested in the works. In *Elizabeth Drinker's Journal* she thus describes a trip which was made shortly after James and Drinker had purchased an interest, in April, 1773:

Next morning we set off⁵ in a borrowed wagon with our 2 mares for Atsiunc, at the Ironworks, Polly Smith with us. We stopped at Charles Read's Ironworks,⁶ 10 miles from Moores-Town—then we went 10 miles farther to Lawrence Saltar's⁷ where we dined late. Went in ye afternoon to ye Forge—saw them make Bar-Iron.

That the Drinker interest continued until well into the 1800's is evidenced by the number of notices which appeared in the news-

³ *Burlington County Deeds*, Book C, p. 336.

⁴ *Suit of William Richards v. Henry Drinker, John Drinker and Joseph Salter* filed in the Court of Chancery, June 6, 1798.

⁵ From Moorestown.

⁶ At Taunton.

⁷ Saltar or Salter.

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papers for runaway servants. The reward for their return was to be paid by Lawrence or Joseph Salter at the works, or by James and Drinker in Philadelphia. Just when the operating company became the "Atsion Company" is not known, but Mr. Walter S. Cox has kindly called my attention to several invoices in his possession which are dated August 22, 1803, and are receipted for the Atsion Company by Reynold Keen. On the other hand, in 1806, Henry Drinker paid the taxes on 3000 acres of unimproved land and a forge with four fires at Atsion. During the following year the Atsion Company appears as the owner according to the tax duplicates. In 1812, E. Comley was assessed as the owner.

In *Elizabeth Drinker's Journal* is another item, under date of March 21, 1804, stating that Henry Drinker had appointed Reynold Keen, Jr., "overseer or manager of ye Iron Works. Wm. Salter took the keys of ye stores from him by force, and would not let him have a horse on which to come to town. Very ill conduct and very ungrateful, all things considered." Reynold Keen had been the clerk at the works since 1794 and possibly earlier. From this we learn that Drinker was the dominating factor in the works at that time.

When in 1805, the Atsion Works were sold at a public auction held at the Merchant's Coffee House in Philadelphia, Jacob Downing, son-in-law of Henry Drinker, bought an interest in it and continued as part owner until his death on October 2, 1823.

The works included at that time a blast furnace, an air furnace in good repair, a forge with four fires and two hammers, as well as a large and valuable cinder dump which had been accumulating for over thirty years, containing much iron. There were, besides these, a sawmill and two gristmills, as well as a site for an additional mill, either a gristmill, a sawmill, a slitting mill, or a rolling mill. Connected with the works were 20,000 acres of land, including large iron-ore beds within half a mile of the furnace. The whole estate was purchased by Samuel Richards.

Watson in describing a trip to "Longbeach Seashore" in 1823 says,

Was much interested to see the formidable ruins at Atsion iron works, (27½ miles). They looked as picturesque as the ruins of abbeys, &c., in pictures. There were dams, forges, furnaces, store houses, a dozen houses and lots for the men, and the whole comprising a town; a place once overwhelming the ear with the din of unceasing ponderous hammers, or charming the sight with fire and smoke, and smutty and



STOVES FROM ATSION IRON WORKS

Charles Read Enterprises

sweating Vulcans. Now, all is hushed; no wheels turn, no fires blaze, the houses are unroofed, and the frames &c., have fallen down, and not a foot of the busy workmen is seen.⁸

This was about the time of Downing's financial difficulties. The works, however, was started up again under the Richards' ownership, and Gordon in describing Atsion says:

Besides the furnace, there are here, a forge, gristmill and three saw mills. The furnace makes from 800 to 900 tons of castings, and the forge from 150 to 200 tons of bar iron annually. The estate belonging to Samuel Richards, Esq., embraces what was formerly called Hampton furnace and forge, and the West's Mills, and contains about 60,000 acres of land. There are about 100 men employed here, and between 6 and 700 persons depending for subsistence upon the works.

That Atsion was a place of considerable importance is evidenced by the fact that the Federal Government established a post office in the village in 1798. The Atsion office was discontinued in 1815 and a new one established at Sooy's Inn near the present Green Bank. On June 13, 1832, the Atsion office was re-established.

Recently several of the old account books of the Atsion Works have come into the possession of the writer, and from them we find many unusual entries. Thus:

April 1, 1826—Jesse M. Christopher Dr. to Furnace	
Acct. for 15 c stamp Stuff @ 20\$ per ton	15.00
April 27, 1826—Jesse M. Christopher Dr. to Furnace	
Acct. for 15 c Stamp Stuff @ 20\$	15.00
May 22, 1826—Furnace Acct. Dr to Jesse M. Christopher for Ladle & Shovel (?) Moulds	
Weighing 2—1—2 @ 6\$	13.57
Est. time on Drawings	2.40
June 14, 1826—Jesse M. Christopher Dr to Furnace	15.97
Acct. for 5 Stampers Ore 3—2—4 @	
for 5 Stampt Stuff @ 20\$	
Oct. 30, 1826—Furnace Acct. Dr to William Coffin Jr., for	
4 half boxes Glass 12 x 18 @ 4	16.00
4 half boxes Glass 8 x 10 @ 3	6.00
Nov. 23, 1826—Jesse M. Christopher Dr to Furnace	22.00
Acct. for 30 c Stamp Stuff @ 20\$ per ton	30.00
Dec. 2, 1826—Furnace Acct. Dr to Weymouth Furnace for 4—1—14 Bar Iron @ 5.50	24.06
Jan. 18, 1827—Martha Furnace Dr to Furnace Acct. for 700 Bush @ \$7 per 1000	4.90

⁸ J. F. Watson, *Annals of Philadelphia and Pennsylvania*, II, 543-4.

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Other odd entries call for "Days Raising," meaning the digging of the bog ore from the bed of the river, for "filling the furnace" and for cutting wood, as well as for whiskey and sundry items for the store.

The Jesse M. Christopher mentioned above was operating the Taunton Furnace and no doubt found it more advantageous to use a proportion of the discarded furnace slag, which still contained a large amount of metallic iron, than to use the crude bog ore by itself. During this time Thomas Sordan was keeper of the furnace and received for his labor twenty-five dollars a month.

The products of the Atsion Iron Works in later years were quite diversified. Pots and kettles of various sizes were among the articles cast, but the products which attract particular attention today are the six-plate stoves on which the works at one time specialized and the open fireplace backs, of which there is a fine specimen in the Bucks County (Penna.) Historical Society Museum.

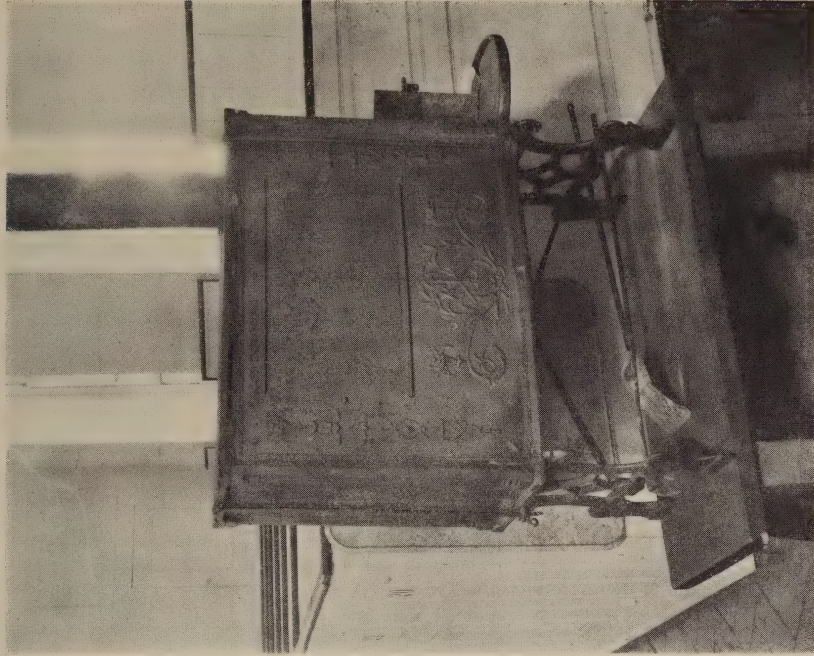
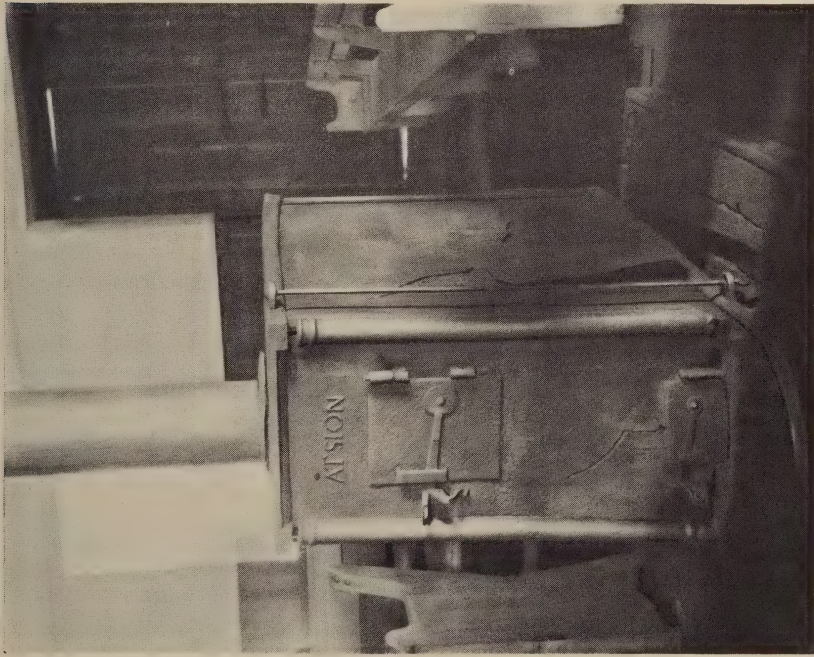
Several stoves have been definitely identified as having been made at Atsion. The oldest of these is the one in the Chesterfield Meeting House in Burlington County. In the Meeting Records is the following minute:

1st Mo. 7-1773 The Treasurer of the Monthly Meeting produced the account of the cost of a stove for the Meeting House 8-4s-10d.

This stove served for three years in the old meeting house and was then placed in the new building and is still in use.

Two other stoves made at Atsion Furnace are in the old Broad Street (First Presbyterian) Church in Bridgeton, New Jersey. They are six-plate stoves with hearth extension on the bottom plates and have the name *Jacob Downing—Atsion Furnace* cast at the top of one of the side plates. Tradition says these stoves were placed in the church soon after it was built in 1792, but the above inscriptions would indicate that they date from 1805 to 1824, probably about 1815. They resemble in many particulars those made at Warwick and Hereford Furnaces in Pennsylvania. The patterns for these stoves were probably brought to Atsion by some workman or were copied from one of these early products.

From the old account books we learn that in 1826-27 these works enjoyed a large trade with merchants along the Hudson River. In order to take care of this trade a schooner, named the *Atsion*, plied regularly between the Mullica River and Albany, N. Y. carrying the finished products to New York, Poughkeepsie, Albany, and



ATSION STOVES IN CROSSWICKS MEETING HOUSE, AND BROAD STREET CHURCH, BRIDGETON

Charles Read Enterprises

Troy. The articles made at that time consisted of cook stoves, box stoves, six-plate and nine-plate stoves, Franklin stoves, special patterned stoves made for Samuel Shaw of Albany and Sylvester Parker of Troy, as well as tops for fire plugs, stopcocks and stuffing boxes. The shipments intended for the Philadelphia market were hauled to a landing on the Rancocas Creek at Lumberton and from there were forwarded by boat down the Delaware River. Among the items sent to Philadelphia were stopcocks and stuffing boxes for the Fairmount Water Works, then being constructed, and "fire plug tops" for the extension to the water system of the city. In 1828, these works made a number of castings for the Trenton Bridge, obtaining the contracts in competition with several of the North Jersey furnaces.

There was considerable trading between the various Richards furnaces, Weymouth, Martha, and Hampton being frequently mentioned. In later furnace books, we learn that limestone was brought in by schooner from the Hudson River district, perhaps indicating that the nearby supply of oyster-shell lime had become exhausted. The Atsion works did not cease operations when the bog ore became depleted, but used "mountain ore" from North Jersey and New York State. It is interesting to note that "furnace men" in 1825 were paid \$25 a month, laborers received seventy-five cents a day and carpenters seventy-eight cents a day. On the other hand, the finished products commanded high prices in comparison with today's quotations. One entry in the Atsion furnace books reads:

July 27, 1828—Furnace A/c Dr to Weymouth Furnace 2 c—
1—18 Bar Iron @ 5.00 13.27

This shows that bar iron was selling for \$100 a ton.

In connection with the ironworks was a store at which a wide variety of articles was sold. It may be in order to quote from the old account books some of the prices paid in 1826 for the items which were offered over the counter, as follows: coffee, 16¢ per lb.; No. 2. Mackerel, 4-5/16¢; New Orleans molasses, 34¢ per gallon; New Orleans sugar, 10¢ per lb.; Indigo blue gingham, 14¢ per yard; cambric cloth, 28¢ per yard; Irish linen, 28¢ per yard; blue calico, 19¢ per yard; butter, 15-25¢ per lb.; mutton, 4¢ per lb.; corn, 80¢ per bushel; rye whiskey, 33-37¢ per gallon; pepper, 20¢ per lb; eggs 11¢ a dozen; potatoes 33¢ per bushel.

Under the Richards administration, which will be described in more detail in connection with Batsto Furnace, the plant was operated until about 1848, when, along with other bog-ore furnaces

New Jersey Forges and Furnaces

and forges, they were compelled to quit, owing to the competition of the anthracite furnaces of Pennsylvania and those using North Jersey magnetic ores. Following the sale of the property, under foreclosure proceedings, the names of various owners appear, among them W. C. Patterson and William W. Fleming. In 1871, the property, then containing 28,000 acres, was sold for \$48,000, and in 1876, it came into possession of Joseph Wharton, whose estate still holds title. No part of the old Atsion Works now remains, but, according to tradition, the foundation stones used in the gristmill, which was destroyed by fire about ten years ago, were from the old furnace walls.

During the early days of operation, many of the Indians living at the Edgepillock Reservation (now Indian Mills), three miles away, found steady employment in and around the Atsion Works. These Indians were supplied with their food, tobacco, and rum from the company store, but unlike the dealings with the other workmen, a receipt was always taken from them for their purchases. Being unable to write they would make their "mark" and the transaction would be witnessed by some bystander.

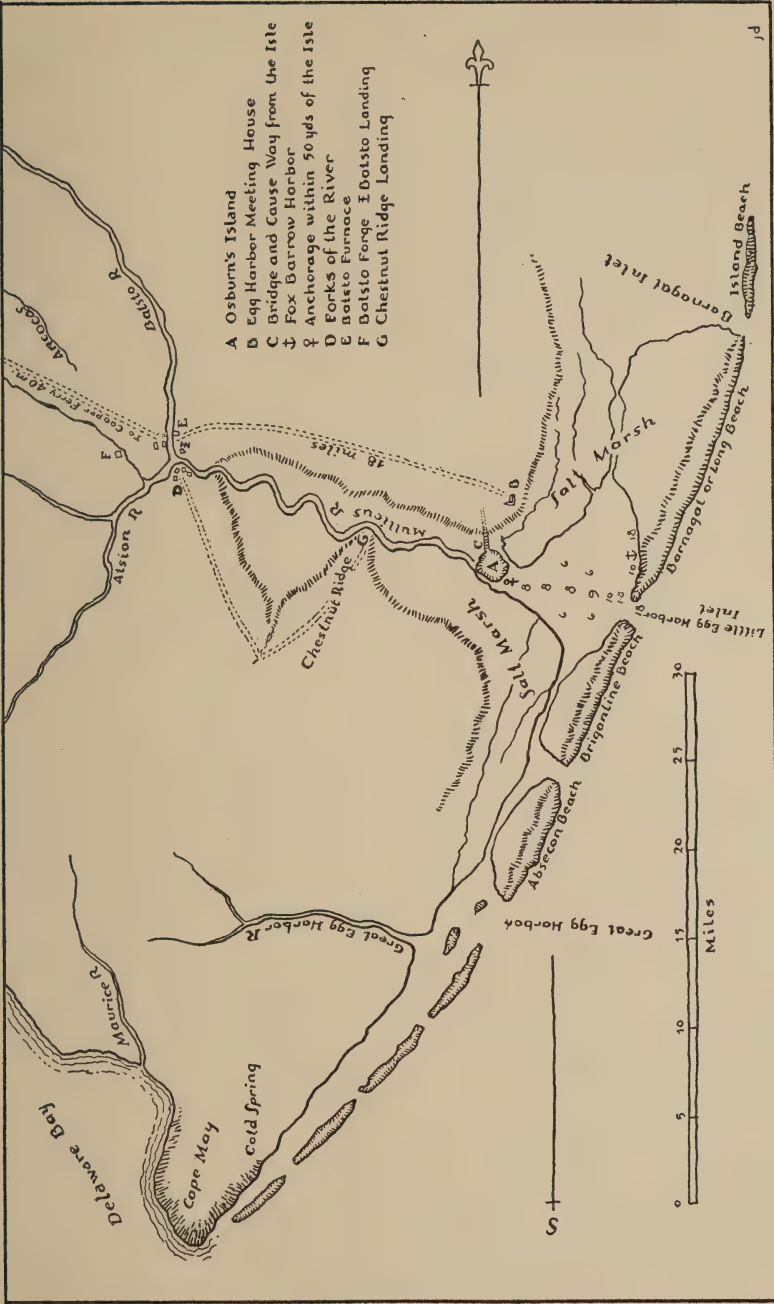
The bog ore at Atsion analyzed 45-47% metallic iron and some samples ran as high as 53-56%. Great masses were taken from the bed of the pond during the winter, when the fires in the furnace and forges were out and the water drawn off. The different kinds of ore were named thus: the top layer, "loam ore"; the next layers, "seed ore"; and the lowest layer, "massive ore."

BATSTO OR BATSTOW FURNACE

Burlington County

The Batsto Furnace was located on the Batsto River or Creek, a branch of Little Egg Harbor, or Mullicas River, at a place where the Indians had a summer village which they called Nescochague, and which was later called Sweetwater. In the minutes of the Gloucester County Board of Freeholders for 1816, this creek is called "Batsto Forge Stream," and a bridge was built over it at a cost of \$190.75.

There was a small settlement about a mile below the site of this furnace, known as "The Forks." These inhabitants were engaged in fishing and lumbering, the former chiefly for home consumption



LOCATION OF BATSTO FURNACE, 1778

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and the latter for shipment to Philadelphia and New York. The cost of transporting the cedar boards and shingles, however, left little profit for the "lumberjacks," so that they barely obtained a livelihood. In most cases, they did not have title to the land from which they were cutting the timber, and therefore offered no resistance to the location of an industry in their midst which promised a better existence than they had heretofore enjoyed. Whether Read knew of the presence of these squatters on the land to which he had taken title is not known, but it is certain that they proved a valuable aid in getting his new venture under way. Many of the descendants of these pioneers remained as tenants and workmen at the furnace until its abandonment. Another advantage which Read possessed over some of the earlier ironmasters was the fact that the church which had been erected at The Forks about 1758 attracted worshippers from "the back country" and soon, without special effort on his part, brought additional workers for the new industry.

Batsto was formerly the property of Israel Pemberton and was known as Whitcomb Manor. It was sold to Charles Read, who was a nephew of Pemberton by marriage. Read began buying and selling land in this vicinity as early as 1754 and by the year 1766 had acquired a large estate in these parts. From these early deeds we can glean much information about Batsto. In one of these dated July 31, 1767, Samuel Farrington conveyed to Ruben Haines of Philadelphia, brewer; John Cooper, of Burlington, gentleman; Charles Read, Esq., of Burlington; Walter Franklin of New York City, merchant; and John Wilson of Burlington County; designated as Owners of Batstow Iron Works, for a consideration of £150, 160 acres of land located on both sides of a branch of Little Egg Harbor River, called Atsion River, including iron mines, woods, water rights, etc. Subsequently he conveyed by sundry deeds a one-eighth interest in about 5000 acres of land at Batsto to Walter Franklin and a like share to John Wilson, thereby disposing of his entire propriety in this operation. From this, it will be seen that while Read is usually credited with having built the Batsto Works, as an individual project, he really only had a one-quarter interest in the works.

It was built about 1766, soon after Read had obtained permission from the Legislature to build a dam across the creek. The site of the furnace is now covered by the artificial pond around which curves the main road. Because the first part of the act sets forth the plans which Read had in mind it is quoted in full:

Charles Reed Enterprises

An Act to enable the Honourable Charles Read, Esquire to erect a Dam over Batstow Creek; and also to enable John Estell to erect a Dam over Atsion River.

And Whereas the Honorable Charles Read, Esq., by his humble petition, set forth that he hath proved to demonstration good Merchantable Bar-Iron may be drawn from such Ore as may be found in plenty in the Bogs and . . . in such Parts of this Province which are too poor for Cultivation, which he conceived will be a public emolument; and that in order to erect the necessary Works, he had lately purchased a considerable Tract of Land lying on both Sides of Batstow Creek, near Little Egg Harbour in the County of Burlington; praying the Aid of the Legislature to enable him to erect a Dam across the said Creek for the use of an Iron-Works; and in order to remove every objection against the Prayer of his Petition hath produced a Certificate from Joseph Burr, Jun., purporting that he, the said Joseph Burr, is and for several Years past hath been in Possession of a Saw-Mill at the Head of Batstow creek aforesaid, from whence Boards only have been floated down but attended with such Expence as to afford a Probability that the said Creek will not be hereafter used for the like Purpose; hence the said Burr alledges that the Dam over the said Creek as petitioned for by the said Charles Read, cannot be of any public or private detriment, but on the contrary greatly advantageous; therefore, etc., etc.¹

From this time on we find frequent reference to the Batsto Works. In an advertisement in the *Pennsylvania Gazette*, January 7, 1768, it is referred to as "the new Furnace at Badston, near Little Egg Harbour." In the *Pennsylvania Journal*, November 22, 1770, one William Doughten advertised that a servant lad, who had lately been taken out of Gloucester jail, had run away from the subscriber at Batsto Furnace, and in April, 1772, mention is made of the excellent quality of the iron made at "Batstowe" furnace, in New Jersey, for the purpose of making steel.

The next owner of Batsto Furnace was John Cox (or as he sometimes wrote his name John Cox, Junior) who in November, 1773, advertised as follows:

WOOD CUTTERS

WANTED, at Batsto Furnace, near the Forks of Little Egg Harbour, a number of hearty industrious MEN, accustomed to wood-chopping, to whom $\frac{2}{6}$ a cord will be given for all they cut from the time of engaging to the 10th of April, the wood chiefly pine. Those desirous of being employed, may apply to

¹ The act is mentioned by title in *Allison's Laws of New Jersey*, p. 282, and in full in *Session Laws* for 1766.

New Jersey Forges and Furnaces

WILLIAM RICHARDS, Manager, at said Furnace, or to the subscriber in Water-street, Philadelphia.

JOHN COX, Jun.

John Cox (1731-1793), who was a merchant in Philadelphia, took an active part in the proceedings which immediately preceded the Declaration of Independence and throughout that memorable struggle was a staunch patriot. He became a member of the first General Committee of Correspondence and of the Council of Safety. When the Philadelphia Associators were organized he was chosen major of the Second Battalion and later was elected Lieutenant Colonel of the same regiment. In March, 1778, by resolution of Congress, he was appointed Assistant Quartermaster General, in which position he was very active in the Continental cause and on intimate terms with General Knox and General Greene.

About 1780, owing to ill health, he purchased the old mansion on the Delaware River at Bloomsbury, below Trenton, built by William Trent in 1721, and here he spent the next ten years. This mansion was one of the historic houses of New Jersey. Robert Lettis Hooper became the owner following the Trents; and during the early years of the Revolution it was occupied by Dr. William Bryant, who apparently maintained friendly relations with the British and Hessians, by whom the house was referred to as the "Doctor's House." Many important letters relating to the affairs of the Continental Army were dated by Colonel Cox at Bloomsbury.

Colonel Cox married on November 16, 1760, Esther, daughter of Francis Bowes, who at one time was a part owner of the Borden-town or Black Creek Forge. Of all the early ironmasters, probably none of them exerted a more influential part in the social life of Philadelphia and Trenton. He had a large family of daughters, all of whom became prominent in the affairs of the state and nation. With her six daughters, Mrs. Cox participated in the reception which was tendered to General Washington by the people of Trenton on his journey to New York to be inaugurated President of the United States. Rachel, the oldest daughter, married John Stevens, Junior, whose signature along with that of John Hart, the "Signer," appeared on many of the issues of New Jersey Proclamation money, and who served as State Treasurer from 1776 to 1779. He was one of the most prominent of the early naval engineers and architects, and in 1811 constructed the first steam ferry boat in the world. Another daughter, Catherine, became the wife of Samuel Witham Stockton, who was active in the services of the colonies

Charles Read Enterprises

abroad, particularly at the courts of Berlin, Vienna, and Holland. After his death, she married the Rev. Nathaniel Sayre Harris. Mary, the third daughter, married Colonel James Chestnut of Mulberry House near Charlestown, South Carolina, while Sarah became the wife of Dr. John Redman Coxe and Elizabeth married Horace Binney, the famous Philadelphia lawyer.

Bloomsbury Court, as John Cox called his home, was the center of many social entertainments. Generals Washington, Knox, and Greene, Count Rochambeau, the Marquis de Lafayette, and many of the French officers were frequent visitors.

During his ownership of the Batsto Works, Colonel Cox was very active in watching the movements of the British ships around Little Egg Harbor Inlet. Charles Pettit in a letter to Governor Livingston mentions a letter which he had just received from Colonel Cox in reference to "the motions of the enemy about the Egg Harbor Inlets."² This letter, now in possession of Mrs. D. G. Baird of Beverly, N. J., shows the conditions existing along the seacoast in the early days of the war and, as it has not been published heretofore, is set out in full.

Batsto Friday Eve June 13th (1777)

My dear Friend

As the bearer waits I have only Time to inform you that a few Days ago a Brig appeared off little Egg harbour Inlet & decoyed of Joseph Lowey & two other of his Boys and that yesterday afternoon a Brig of 16 a Sloop of 12 a Schooner of 8 & a Pilot Boat of 6 guns were Piloted over the Bar & are now at the Fox burroughs & in possession of a Brig in which I am Concerned just ready for Sea & a very fine Vessel belonging to Wilmington & I take it for granted will continue there as there are some Vessels hourly expected from Sea of which I dare say Lowey has informed them. I yesterday wrote a Letter to the Council of Safety advising them of Lowey's being taken off & that I expected he would Pilot in the Tenders & sent it to Haddonfield but the messenger is returned & informs me the Governor & Council were all dispersed and he brought back the Letter. I think it highly necessary they should know the situation we are in. I shall go down to Chestnut Neck tomorrow with a number of Men in order to Erect a small Fortification of 8 or 10 Guns to prevent them if possible from penetrating the County

I am in haste

Esteemed & Most Hb Svt

John Cox

² "Correspondence of the Executive of New Jersey 1776-1786," p. 69.

New Jersey Forges and Furnaces

Following this letter a memorial dated July 5, 1777, and signed by John Cox, Elijah Clark, and Richard Wescott was presented to the Council of Safety, petitioning that body to fortify Little Egg Harbor Inlet, so as to prevent further depredation by the British warships. The Council decided that it was not within its power to decide on the question, and referred the petition to the Legislature. In September 1777, the General Assembly authorized an appropriation of £430/1/3 for the erection and equipment of a fort at Fox Barrows on Chestnut Neck and deputized Clark and Wescott to supervise its construction. However, according to Capt. Pat Ferguson of the Seventieth Regiment in his report³ to General Clinton of an attack made on the fort on October 15, 1778, although the breastworks had been erected, no guns had been mounted, and it therefore afforded little protection to the Continental defenders. No explanation seems to be forthcoming for the delay in fortifying this point. Had adequate protection been provided for this famous harbor, which was used by the American privateers against British commerce, the massacre of Chestnut Neck, sometimes called "the affair at Egg Harbor," would undoubtedly have been averted and many of the Tory raids on the inhabitants along the shore would have been prevented.

Cox was a member of the New Jersey Legislative Council from 1781 to 1783 and its vice president during part of this time. The threatening attitude of the Continental troops against the Congress at Philadelphia in June 1783 greatly aroused the patriotic people of the colonies, and at a mass meeting in Trenton Colonel John Cox was made a member of a committee to express to Congress the resentment of the inhabitants of that city to "the daring insult offered to the Supreme Government of the American Union," and to extend to it an invitation to hold future sessions in their city,

It was under the Cox ownership that William Richards first became connected with the Batsto Works. According to a notice in the *Pennsylvania Journal*, November 24, 1773, two Irishmen had run away from "Batsto Furnace, near the forks of Little Egg Harbour," for whose capture John Cox, Jr., in Philadelphia and William Richards at the works offered a reward of twelve dollars. William Richards was succeeded as manager of the Batsto Works by Joseph Ball, who was acting in that capacity, July 1, 1776.

In 1775, Litle and Flower, iron merchants in Second Street, Philadelphia, announced that they had sixty tons of Batsto pig iron for

³ Wm. S. Stryker, *The affair at Egg Harbor New Jersey, October 15, 1778*, p.28.

Charles Read Enterprises

sale.⁴ John Litle, who, when Philadelphia was occupied by the British, moved to New Mills (Pemberton), N. J., became interested with Samuel Cooper of Cooper's Point (Camden) in a salt works on the Jersey Coast.⁵ He also supplied the Continental Army with camp kettles and other ironwork, besides furnishing nails and spikes for the defensive works at Fort Island and the Salt Works at Toms River. Benjamin Flower, of this firm, was later Commissary General of Military Stores.⁶

A few months later there appeared in the newspapers the first definite information of the great variety of articles which were being made at these works:

Philadelphia, June 5, 1775.

MANUFACTURED at BATSTO FURNACE, in West New-Jersey, and to be sold, either at the Works, or by the Subscriber, in Philadelphia, a great variety of iron pots, kettles, Dutch ovens, and oval fish kettles, either with or without covers, skillets of different sizes, being much lighter, neater and superior in quality to any imported from Great-Britain—Potash, and other large kettles, from 30 to 125 gallons; sugar mill-gudgeons, neatly rounded, and polished at the ends; grating-bars of different lengths, grist-mill rounds; weights of all sizes, from 7 to 56; Fullers plates; open and close stoves, of different sizes, rag-wheel irons for saw-mills; pestles or mortars; sash weights, and forge hammers of the best quality Also Batsto Pig-Iron as usual, the quality of which is too well known to need any recommendation.

JOHN COX

Pennsylvania Gazette, June 7, 1775.

Early in 1776, John Cox agreed to make at Batsto a large number of cannon balls for the Council of Safety of Pennsylvania. He contracted to deliver them by water at Philadelphia, but owing to the vigilance of the British ships along the Jersey Coast, it was impossible to carry out this part of the agreement. On May 16, the Council of Safety directed that a letter be sent to John Cox, Esqr., requesting him to send to the city, by wagon, all cannon balls he had made for the Council and informing him that he would be allowed the difference between land and water carriage.⁷

The correspondence which passed between the Council of Safety and John Cox, or Joseph Ball,⁸ his agent, is an exceedingly interesting commentary of the times. These letters follow:

⁴ *Pennsylvania Journal*, January 11, 1775.

⁵ *Pennsylvania Magazine of History*, X, 33-34.

⁶ See Andover Furnace.

⁷ *Minutes of the Provincial Council of Pennsylvania*, X, 572.

⁸ Joseph Ball was born in Berks County, Pennsylvania, in 1752. In his early days he was the manager of the Batsto Iron Works, then owned by John Cox.

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Batsto, May 22d, 1776.

Sir:

Major Cox informs me he wrote you this day, that he had sent to Engage Teams to Hawl up the remainder of the Bullets, Since which the person he sent has returned, but cannot engage any, as the teams this way are employed by the Atsion Compy to Hawl up Iron for the Frigates. I have Spoke to the Carters you sent down to come for the remainder of the Shott, which they are willing to do, provided you do not send them elsewhere, and that Mr. Erwin has not pre-engaged them—if these teams could take up Two loads more each, we could get as many more as we take up the Remainder.

I am, for Mr. John Cox

Sir, yr H^ble Servt.

JOSEPH BALL.

Directed—To Mr. Owen Biddle, one of the members of the Committee of Safety, in Philadelphia.⁹

It appears that on May 20, 1776,—two days before the above letter was written—the Committee of Safety had adopted the following:

Resolved, That Mr. Owen Biddle be requested to procure 5 or 6 Waggons and send them to Doct'r Coxes' Iron Works in the Jerseys, to bring with all possible expedition, the Shot he made for account of this Committee.¹⁰

Following this Cox wrote to Owen Biddle explaining the difficulties he had had in trying to get teams, and the apparent indifference of the local people in aiding the colonial government.

He became sole owner of the works in 1781 and about 1784 sold to his Uncle, William Richards, a substantial interest. He was a staunch friend of the Colonies as evidenced by the amount of ammunition which was made at Batsto, the negotiations for which he was largely responsible. He took the oath of allegiance to Pennsylvania in 1777 and later joined in the plans of Robert Morris to sustain the public credit, a step which resulted in heavy losses to the fortune which he had made in business. He became a director of the Bank of the United States and was one of the original directors of the Insurance Company of North America, of which he was president for a short time. His later activities included the presidency of the Union Insurance Company and of the Pennsylvania Company for Insurance on Lives and Granting Annuities.

Ball was heavily interested in real estate in New Jersey, Virginia, Western Pennsylvania, and the District of Columbia. He died at his country seat, near what is now Port Richmond, Philadelphia, on April 24, 1821, leaving six uncles and six aunts as heirs. Much litigation followed his death, because of the absence of any laws permitting the executors of a non-resident to transfer lands. In New Jersey this situation was cleared up through a private act of the Legislature giving the executors proper authority, but in the District of Columbia the litigation extended over many years.

⁹ *Pennsylvania Archives*, First Series, IV, 761.

¹⁰ *Minutes of the Provincial Council of Pennsylvania*, vol. X, p. 575.

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Batsto, May 22d, 1776, 4 o'clock, P. M.

Sir,

Your favor of the 20th Inst., came to hand about two hours ago; the six waggons are now loaded and ready to start, and I expect will be at Cooper's Ferry by tomorrow Evening. My Manager sent off three loads this morning, and I am in hopes that my Overseer, who is gone in Quest of Teams, will return sometime to-morrow with a sufficient number of waggons, to take the remainder of the Committees Order up in the course of next week. You judged well in sending Teams from Philadelphia, it being almost impossible to procure them here at this season of the year, most of the Farmers being busily engaged in planting, and those who make carting a business, all employed in transporting goods across from hence to Philada., Brunswick and New York.

I am, Sir,

Your Obed't & H'ble Servt.,

JOHN COX.

Directed,

To Owen Biddle, Esq., one of the Committee of Safety, Philadelphia.

P.S.—All the Shot ordered by the Committee are Cast.¹¹

According to the minutes of the Council of Safety, Colonel Cox was paid £2481/55/0 for these "shott."¹² He appears to have held confidential relations with the Council and in September, 1777, was authorized to "purchase a Tract of Wood Land, in the neighbourhood of the Salt Works in New Jersey, belonging to this State, on the best terms it can be obtained, for the use of the said works."¹³

In addition to making munitions, the Batsto Works also made pans for evaporating salt water and recovering the salt, so much needed by the army. The State of Pennsylvania had advanced the money for building such a works at Toms River, in New Jersey, and placed Thomas Savage in charge, who, writing to a committee of the Council of Safety at Philadelphia, under date of October 26, 1776, says:

I have nearly compleated a boiling house one hundred sixty-nine feet long, twenty-nine feet wide, a store sixty feet long, twenty feet wide, compleated two drying houses, a small Kitchen, Lime house, stable finished, mill work for my pumps in good forwardness, will be compleat before I shall get my boilers from Colonel Coxe's Furnaces, whose people have dis-

¹¹ *Pennsylvania Archives*, First Series, IV, 762.

¹² *Pennsylvania Colonial Records*, XI, 54, 98; *Pennsylvania Archives*, First Series, I, 34.

¹³ *Pennsylvania Colonial Records*, XI, 294.

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sapointed me, or should have had part of the works going before this.¹⁴

So important were the Batsto Works thought to be that, when Colonel Cox, who also at the time owned the Mount Holly Iron Works, petitioned the Assembly for the exemption of his ironworkers, that body, sitting at Haddonfield, on June 5, 1777, appointed Cox, who is styled "Proprietor and Conductor of said Works," to enroll a company of fifty men and two lieutenants, with himself as captain, and exempted this company from military duty except in case of invasion by the enemy.

After the destruction of the property of the inhabitants in the vicinity of the Egg Harbor Meeting House (Tuckerton) by the British expedition under Captain Ferguson in October, 1778, it was planned to proceed up the river and destroy the ironworks at Batsto. This objective was abandoned when it was learned that Pulaski's Foreign Legion was encamped in the neighborhood. The British did, however, surprise a picket post and massacre about forty men before Pulaski, who was half a mile away, could marshal his forces for a determined attack. Pulaski and his troops had arrived in Trenton on Sunday, October 4, and on learning of the plan of the enemy to make a descent on Egg Harbor, marched to that place with all haste. He did not arrive at the shore until after the British had destroyed the shipping and stores at Chestnut Neck, and had it not been for a deserter from his ranks who furnished the enemy with information as to the exact position of his troops, he would not have seen any action on this expedition.

As already noted, Joseph Ball was connected with Batsto Iron Works as manager for John Cox as early as 1776, and possibly earlier, but not, as often stated, as owner. He did not become the chief proprietor of the works until 1778. According to the *New Jersey Archives*, (First Series, Vol. XXVI, p. 577), Charles Pettit¹⁵ was one of the owners of Batsto Furnace in 1781. Blair McClen-

¹⁴ *Pennsylvania Archives*, First Series, V, 56.

¹⁵ Charles Pettit, who was a son-in-law of Andrew Reed of Trenton, was prominently identified with the pre-Revolutionary history of New Jersey. He was at one time Deputy Surrogate of the Province and later private secretary to Governor William Franklin. When the latter took sides with England, he declined to go along and became an active partisan of the American cause, and was made secretary of the state of New Jersey under Governor Livingston. He was appointed Assistant Quartermaster General in the Continental Army by resolution of Congress in March 1778 and served with distinction as such until he resigned on June 20, 1781. After the war he moved to Philadelphia and was actively identified with the business life of that city, being one of the original organizers of the Insurance Company of North America, and its second president, and was closely associated with Joseph Ball in other ventures.

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achan, a prominent Philadelphia business man, also held at one time an interest in these works. Pettit no doubt became associated in this enterprise through his close and friendly relations with both Colonel Cox and Joseph Ball. In 1779, we find the latter taxed for 1500 acres of land and a furnace at Batsto, but in this and subsequent tax duplicates the name of Charles Pettit is not met with in this region.

According to an agreement dated July 5, 1784, found among the *Swank Papers* in the Cambria Free Library, Johnstown, Pa., William Richards of Chester County, Pennsylvania, having purchased the Batsto Iron Works, together "with all the Lands, Stock, Ore and Appurtenances of every kind thereunto belonging," Joseph Ball of Burlington, New Jersey, and Charles Pettit of Philadelphia each agreed to take a one-third share of the purchase. The agreement specified that Richards was to act as Manager or Director of the Works and for his services was to "be found and provided with out of the common Stock of the Company all such reasonable Accommodations for himself & his Family residing at the said Works, as have been usual on such Occasions and shall moreover be allowed and paid out of the Profits or common Stock of the Company the Sum of three hundred Pounds annually as a further Compensation for the use of his time and Talents in the said Business."

Charles Pettit was appointed "Agent and Factor" in Philadelphia and was to dispose of the output of the works and was to purchase, collect, and forward to the works such goods, merchandise, and other articles for the said works as instructed by the Manager and "as the funds of the said Company shall enable him." He was to be paid £500 annually in lieu of commissions, clerk hire, and storage. The compensation was to begin on June 10th, over a month before the date of the agreement.

One of the provisions of the agreement was that there should be a settlement at stated periods, or at least once a year unless the continuation of the blast occasionally delayed it. By another clause the contracting parties covenant for themselves and their estates to keep the terms of the agreement inviolate for two years and then until the owners of two-thirds in interest agree to dissolve it.

William Richards obtained a principal interest in the furnace and several thousand acres of land between the years 1786 and 1790. From a letter written by Colonel John Cox to William Richards, dated at Bloomsbury, New Jersey, January 1, 1789, we learn that the former must have had some interest in the Batsto Works at

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that time, although its extent is not known.¹⁶ In this letter Cox gives instructions that one Sambo "shall be employed on the forge in such a way as you may think best"—instructions which could only have been given to one of William Richards' temperament premised upon a right to issue the same.

When William Richards sold a tract of land near Batsto to Nicholas Sooy in 1801, he had inserted in the deed the following reservation:

excepting all mines, minerals, Iron Ore, iron Stone or ore of whatsoever kind and the privilege of Raising and Hauling away the same Together with all and any Singular, the Woods Timber, ways waters, etc.

Sooy was the proprietor of Sooy's Inn, north of the present Green Bank, an important place on the main stage road between Philadelphia and Tuckerton, and a center of activity in the Pine Belt.

During the War of 1812, Colonel Richards had several contracts to supply the government with cannon balls. The late Charles F. Green relates the following incident which happened at that time:

The Colonel had finished an order for 50 tons of cannon shot which were to be delivered at New York. The only vessel in the river available for this service was a 60-ton schooner, owned and managed by a colored man, named David Mapps, who with a crew of his own race, traded regularly between New York and Little Egg Harbor. David was a Quaker and stuck to the tenets of his faith like brick dust to a bar of soap. Proceeding to the wharf where the schooner lay, Colonel Richards called the dusky skipper on deck.

"David," said he, "I have a freight for you, one that will pay you well."

"And what may it be?" queried David.

"I want you to take a load of cannon balls to New York as soon as wind and tide will get you there," said the Colonel.

"Did thee say cannon balls?" asked friend Mapps.

"Yes," replied the Colonel, "they are for the defense of the country and the government needs them."

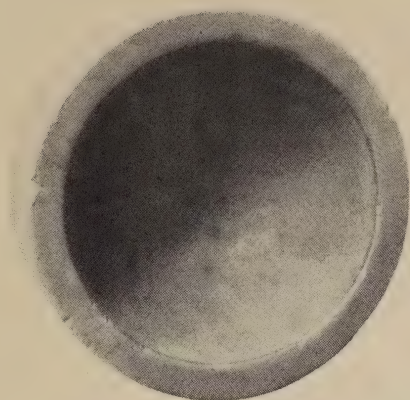
"I'd like to oblige thee," was David's mild, yet firm rejoinder, "but I cannot carry thy devil's pills that were made to kill people."

No argument could change his decision and Colonel Richards was obliged to find other means of transportation for his "devil's pills."¹⁷

William Richards (1738-1823) is the best known of the early South Jersey iron manufacturers. He was a native of Berks County,

¹⁶ *Pennsylvania Magazine of History*, XI, 501.

¹⁷ C. F. Green, *Pleasant Mills, New Jersey*, p. 27.



SIX-INCH SHELL MOULD FROM BATSTO FURNACE



FIRE BACK FROM BATSTO FURNACE

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Pennsylvania, and learned the iron business at the Coventry Forge, under the instruction of John Patrick. At Warwick Furnace, where he was subsequently employed, he became familiar with the art of making decorated stove plates and firebacks. When he went to Batsto Furnace he was thoroughly trained in the making of pig iron, forgings, and castings, and able to carry on the recently established works in accordance with the then best-known practices. While at Coventry Forge he married Mary Patrick, daughter of the manager of these works, and after her death in 1794, he married Margaret Wood of Burlington, N. J. On the outbreak of the Revolution, Richards returned to Pennsylvania for military service during the first few years of the war, coming back to Batsto about 1780.

William Richards, by his two wives, had fourteen sons and five daughters, of whom Samuel, Thomas, Jesse, Elizabeth Haskins, Anna Maria White, Benjamin W., Augustus H., William, and George W., were living at the time of his death. His son John and daughter Abigail had died before the will was made and Rebecca, who married John Sevier, died before her father. There were several other children who had died young.

Of the living children, Samuel became the owner of the ironworks at Atsion, Martha, Weymouth, and Speedwell; Jesse became the manager of the Batsto Works; and Thomas established the glassworks at Jackson, Camden County, N. J. George W. Richards was heavily interested in the Camden and Atlantic Railroad Company and served as its president for two years. Benjamin W. Richards was mayor of Philadelphia from 1829 to 1831.

The feudal relations which existed between the proprietors and those employed at the early ironworks in New Jersey is fully exemplified at Batsto. This ironworks was not operated by slave labor, as was the case of many of the North Jersey furnaces, such as Andover and Union, and in a few of those in South Jersey. Some of these old iron furnaces closely resembled the famous southern plantations in the manner of the life and the position of the owner. William Richards considered the estate as a true manorial possession and conducted it as lord of the manor. He was not only the friend of those employed at the furnace and on the farms, but also their counsellor. He exercised a great influence over them. When in need of a doctor, a lawyer or a minister, an appeal was made to the "big house," in which the proprietor lived, and either his wife or some member of the family was always ready to give aid and comfort in their dire needs. Their groceries and clothing

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came from the store owned and operated under the personal supervision of the proprietor, and were doled out to the workers without excessive profits and with no attempt to influence over-buying. At election times, the workers willingly followed the party candidates favored by the employer, whom they considered as better qualified to decide the issues which would be best for their own interests.

William Richards continued to operate the works successfully until 1807, when his son Jesse became the manager. Shortly after the death of the father, the estate, which included the Batsto Iron Works and about 50,000 acres of land, was directed to be sold at public auction at the Merchant's Coffee House in Philadelphia.¹⁸ It is interesting to note that the parcels of land included in the estate were designated by names which are still in use in that section, such as the "Indian Cabin Mill Tract," the "Sooy Tract," the "Tulpo-hocking Tract" and the "Pleasant Mills Tract." At the sale, the properties around Batsto were bought in by members of the Richards family subject to certain encumbrances.

The inventory of the estate shows that he owned considerable property on School Alley and Mill Street, Mount Holly, and on Vine and Callowhill streets, Philadelphia. The Batsto Furnace and farms were appraised at \$55,200, while an item of book accounts, due from his children, amounted to \$72,391.87—over half the entire estate.

In his will he directed that his colored men, Andrew and Ben, were to be set free at his decease, if they had not been set free before, and provided that if Ben remained he was to have a certain plantation of two hundred acres with the improvements thereon. Richards' daughter Rebecca died in the meantime, and he directed that her share should be given to her children, less the amount charged against her husband, John Sevier, on the Batsto books. He gave his little daughter "Mamie" (Mary Wood Richards, b. 1815) equal rights with the other children.

The furnace was rebuilt twice during its existence, the first time in 1786 and again in 1829, the other date (1766) shown on an old plate being the date of its original erection. By 1835, however, the profits in the business began to lessen, due to the increased cost of "coal" and the beginning of the competition from the Pennsylvania furnaces. To offset this situation, Jesse Richards started other industries, including a glassworks and a paper mill. Owing to financial depression which spread over the country about this time, none

¹⁸ *Trenton Federalist*, October 18, 1824.

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of the new industries were profitable. To meet the insistent demands of the creditors, one after another of the tracts of land was mortgaged until no further funds could be raised in this way. Soon after the death of Jesse Richards which occurred June 8, 1854, some 55,000 acres out of a total of 80,000 acres to which the family held nominal title were sold. The various industries were soon closed down, many of the workmen moved away, and the buildings allowed to go into decay. Finally under a sheriff's sale all connection of the Richards family with the estate ceased. The last trace of the old ironworks was destroyed by fire in 1874, leaving only the mansion house and the old furnace foundations as mute reminders of its former glory.

A correspondent under date of December 18, 1866, wrote in the *New Jersey Courier*:

In passing through the village of Batsto, a few days ago, I took a notion to examine the ruins of the old iron furnace, that stands at the north entrance of the village. This old relic was built in 1766, just one hundred years ago. The old furnace and forges have passed away, and glass houses, grist and saw mills, paper manufactories, etc., have taken their place. Batsto at present is under the patriarchal supervision of Thomas Richards, one of the owners, and boasts of the two saw mills, one grist mill and a large window-glass factory.

Early in the career of William Richards, he established his own selling agency in Philadelphia, which was looked after by his sons. The will of his son, John,¹⁹ who died in 1793, contains a legacy to his father, William, Senior, of "one-half the commissions due me from the business in Philadelphia."

During the early days of Batsto Furnace it made decorative stove-plates, or chimney-backs. Two of these have been identified by Dr. Mercer, one with the word "Batsto" and the date 1770 cast on it, and the other, made the same year, represents a scene in low relief of a sportsman aiming at a bird in a tree and another bird on the wing, while a dog is pointing in the foreground. A portion of an old stove plate or fireback was recently found by Mr. N. R. Ewan at New Gretna with the name "Batsto" clearly outlined but the decorative portion missing.

The ornamental iron fence, which formerly enclosed the grounds back of the State House (Independence Hall) in Philadelphia, was made at Batsto, and many of the grave markers in the old Pleasant

¹⁹ This John Richards should not be confused with the John Richards who was interested in the old Weymouth plant.

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Mills burying ground were also cast there. The steam cylinder for John Fitch's fourth steamboat was a product of this furnace.

The New Jersey Historical Society has a rude and somewhat defaced casting bearing the initials G. W. and a heraldic design, which is said to have been made at Batsto about the time of the Revolution. Thomas H. Richards says it was probably intended to represent the coat-of-arms of George Washington. While the purpose in making this casting is not known, it is interesting as confirming the fact that the artistic side of the business was not overlooked at the Batsto Works in those early days.²⁰

In later years the chief product of this plant was water pipe. There were many miles of Batsto pipe in the streets of Philadelphia and Camden, replacing the original old wooden ducts. A section of water pipe from the old "Mickle Well" which formerly supplied the people in a large section of Camden, New Jersey, has been identified by a member of the Mickle family as having come from Jesse Richards' furnace at Batsto, and is now in the museum of the Camden County Historical Society.

The iron columns which still (1927) support the roof of the porch of the old "Medford House" at Medford, New Jersey, were made at Batsto in 1842-3 and at the base of each of the pillars is the letter "B" cast in relief—this was the mark of all castings made at Batsto under the Jesse Richards' proprietorship.

²⁰ *Proceedings of New Jersey Historical Society*, First Series, X, 12.

SHARPSBOROUGH OR SHARPSBURG FURNACE AND FORGE

Sussex County

SHARPSBOROUGH FURNACE, located one mile south of Hamburg, on a branch of the Wallkill, was established in 1768 by Isaac Sharp.¹ It was the second furnace erected in Sussex County.

Anthony Sharp moved from England to Ireland about 1650 and became a prominent merchant in Dublin. In 1676-7, with six others, he obtained a deed from the trustees of Edward Byllinge for one-ninetieth of the ninety undivided parts of West Jersey. It seems quite likely that he was one of the creditors of Byllinge, a brewer of London, who had purchased from Lord Berkeley his one-half interest in New Jersey. Anthony Sharp purchased the lands in West New Jersey not as an intending settler, but in the hope that the colony might be a haven for Quakers who were being persecuted on account of their religious beliefs. He subsequently made other purchases of land and became one of the largest landowners in West Jersey and East Jersey. While an absentee landlord, he took an active interest in the conduct of the government of the colony and was one of the signers to the agreement giving authority to George Willocks to receive quit rents. He also signed the protest made by the Proprietors of East Jersey against the rule that all vessels destined for New Jersey must be entered through the customs of the port of New York. He signed these by virtue of his ownership of seven-twelfths of a Propriety in the Eastern Division of New Jersey. Anthony Sharp, the elder, conveyed much of his land holdings to his son Isaac, but as there was a doubt as to whether these lands were not entailed on him, a subsequent agreement was made between Isaac Sharp and his eldest son, Anthony, by which the latter renounced his interest, whereupon the equity in the estate was passed to two other sons, Isaac, the younger, and Joseph.

It remained for his grandson Isaac, the second of that name, to first settle and develop these purchases. Isaac Sharp came to New Jersey about 1730, locating at Blessington, now Sharpstown, in

¹ *New York Journal*, February 22, 1770.

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Salem County, and soon became one of the most prominent men in the southern part of New Jersey, serving several terms as judge of the courts of Salem County, and as a member of the General Assembly.

The ironworks, which Sharp erected on one of the tracts of land he owned, "stretching from Deckertown to the source of the Wallkill," was called the "Sharpsborough Iron Works." As noted below, it was an extensive establishment for that period, but never proved a profitable investment. By the will of Isaac Sharp, dated March 22, 1770, he bequeathed to his sons, Anthony, Samuel, Isaac, and Edward, and daughters, Mary, Sarah, Rachel, and Elizabeth,

all my Lands On a branch called Willkill, or the Branches thereof In the County of Sussex, with the Iron Works, Grist Mill and all and every Appurtenances thereunto belonging, Together with all my Propriety Rights and Shares of Propriety Rights, both in East and West Jersey.

They were to hold the property as tenants in common, "Excepting a small Benefit out of the above mentioned Iron Works to be paid to my daughter Hannah Delany," wife of Martin Delaney.²

A rather curious provision of this will was the method proposed for the division of the lands which Isaac Sharp and his brother Joseph owned in common. It was directed that the Monthly Meeting or Meetings of Friends wherein the several tracts of land lay, should appoint as many men as the meeting thought proper to serve with men to be chosen by his brother, Joseph Sharp, and that their partition should be binding. The same procedure was then proposed for the division of these lands among his children.

While the inference in the will of Isaac, above noted, is that he was the sole owner of the ironworks, subsequent references tend to prove that Joseph, his younger brother, also had an interest. On the death of Isaac Sharp, Joseph, who was then living in Pilesgrove township, Salem County, offered for sale a one-half interest in the works consisting of "a forge with four fires and two hammers with coal houses and a convenient dwelling house, the whole built with stone, and in good repair, not more than three years old," also a one-half interest in a mine, within a quarter of a mile of the forge, "containing a sufficiency of good iron ore to supply any number of works, which has been proved both in blooming and refining, and is of a superior quality to any iron made in the province." Also, one other forge with three fires and one hammer, "with sufficiency of room to erect another hammer, and fire in the same house." Besides

² S. S. O. *Book of Wills*, No. 15, pp. 257-258.

Sharpsborough Furnace

these, a blast furnace, a sawmill, a smith's shop, tanyard, curry shop, shoemaker's shop and a bark mill were offered for sale.

The successive advertisements of this property show that gradually the number of forge fires had decreased. In September, 1771, Abia Brown³ offered for sale a one-third interest in the Sharpsburg Furnace and Forge, the latter then consisting of three fires and two hammers and "a wooden bellows." The furnace and forge were located at the same dam. Again, in 1772, it is mentioned as the property of the "late Isaac Sharp of Salem County," and consisted of a small furnace with a capacity of fourteen to fifteen tons of pig metal weekly, while the forge contained two "well constructed fire places and a hammer completely fixed."

A still further attempt to obtain a tenant for the property was made in 1774, which according to a notice is described as follows:

The works consist of a furnace, with casting and bridge house, coal houses, and other houses necessary, one forge near said furnace, and a sawmill; the forge has three fires and two hammers. One other forge about a mile from the furnace, consisting of two fires and one hammer, with a good stone coal house, a dwelling house, and other houses necessary: Also the half part of a valuable grist mill, with one pair of stones over-shot, on a never failing stream of water, and lately new repaired.

New York Gazette and The Weekly Mercury, October 31, 1774.

There were also between 4000 and 5000 acres of land, partly cleared and under cultivation and "within two miles of the furnace, 300 acres of good ash swamp." It was announced that there was sufficient timber on the premises to supply the works with coal, for a number of years, and "an inexhaustible fund of excellent iron oar, within a mile of the furnace."⁴ The notice states that the "works have been erected six years."

³ Abia Brown, son of Preserve Brown, was the son-in-law of Joseph Sharp, having married the latter's daughter Margaret on March 12, 1765. He was at that time of Salem, but the next year he was operating a sawmill in Burlington County known as Brown's Mills, and the following year settled at Sharpsborough Iron Works. He was a staunch patriot and was one of the first members of the Committee of Correspondence for Sussex County, and a member of the General Assembly from that county in 1776-1777. In these meetings he was associated with Hugh Hughes of Chelsea and Greenwich Forges, Mark Thompson of the latter works and Archibald Stewart, mentioned under the Union Iron Works.

⁴ E. D. Shuster in a monograph, *Historical Notes of the Iron and Zinc Mining Industry in Sussex County, New Jersey*, says that the mine here referred to was undoubtedly what is now known as Mine Hill, which proved to be one of the greatest deposits of zinc ore in the world. The magnetic iron ore which lies parallel with the zinc vein, however, appeared at that time to be the more valuable.

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From the above and subsequent notices, it is difficult to understand the exact status of Joseph Sharp in connection with these works. While he was advertising for a tenant for the property, the sheriff was proposing to sell it under an order of the court to satisfy a judgment against him. The sheriff's notice was as follows:

SUSSEX COUNTY, October 20, 1774.

By virtue of several writs of *Fieri Facias*, against the goods and chattels, lands and tenements of Joseph Sharp, to me directed will be exposed to sale at public vendue, at Sharpsborough Iron Works, in the township of Hardyston and county of Sussex New Jersey, on Tuesday the third day of January next, and to be continued from day to day until the whole are sold,—Slaves, horses, oxen, cows, young cattle, sheep, and swine, pig and bar iron, waggons, carts, plows and harrows, blacksmith's tools, and a variety of implements necessary in carrying on the iron-making business both in furnace and forge.

On the same day, between the hours of twelve and five o'clock in the afternoon, at the same place, will be sold, the said Works, with the lands thereto appertaining, containing between 700 and 800 acres, of very valuable land; The Works consist of one furnace and one forge, situate on a branch of the Wallkiln (a never failing stream) within 50 yards of each other; The forge contains four fires and two hammers: Near the works is good frame dwelling-house, large coal-house, black-smiths shop, large barn and stables, and sundry other out-houses; the land abounds in the greatest plenty with the best of iron ore, very convenient to the works. . . .

THOMAS POTTS,
Sheriff.⁵

At the same time there was offered for sale another forge some distance away from the above with four fires and two hammers. In this Sharp had only a half interest.

Joseph Sharp's difficulties with his creditors must have been settled, however, since on April 12, 1775, he offered these same works for rent for a term of years. The works were operated during the Revolution, making war materials, and at the fifth meeting of the first session of the Legislature in 1777, on petition of Abia Brown, "Partner and Conductor" of the Sharpsborough Works, twelve men were exempted from military duty so long as they were employed in the said works. The works were not successful, however, and Joseph Sharp finally closed them. After the Revolution, his sons started up the forge and added another forge fire, but again the industry proved unprofitable. Had it not been for the rise in

⁵ *Pennsylvania Packet and the General Advertiser*, November 7, 1774.

Sharpsborough Furnace

land values, Joseph Sharp would have become a bankrupt. The works were finally abandoned.

In the will of Isaac Sharp, son of Joseph, dated May 29, 1780,⁶ he mentions his share in the Iron Works which he inherited from his father and a tract of thirty acres of land on Pompton Mountain, called the "Mine Land." He also mentions his two nephews, sons of his sister Margaret Brown, as residuary beneficiaries.

Between the time Joseph Sharp ceased operating the forge and his two sons revived it, Stephen Ford, Sr. conducted the works and being in sympathy with the English, made cannon balls for the British army. "His men often performed their work at night, and the children and female members of the family carried food for the workmen from the house to the forge after dark. He received considerable sums of English gold, which he secreted in small bags let down in the partition walls between the plastering. He had sheet-iron shutters made at the forge for the windows of his house. This was reputed to be a place of retreat for the more open Tories and 'freebooters' when they were closely pursued. Ford seems to have been on good terms with his neighbors, even the patriotic ones, and kept quiet in the later years of the war, escaping arrest although under surveillance."⁷

⁶ S. S. O. *Book of Wills*, No. 23, p. 382.

⁷ *Tuttle Papers*.

SHREWSBURY OR MONMOUTH FURNACE OR TINTON OR TINTERN FALLS IRON WORKS

Monmouth County

THE first ironworks established in the Province of New Jersey was erected by, or for James Grover. It is not definitely known whether Grover attempted to build this furnace before Henry Leonard arrived from New England, but it is an established fact that it was operated under the Leonards after 1674. James and Henry Leonard had been quite successful in operating ironworks in Massachusetts, especially at Raynham in that colony. The Leonards were the first skilled ironmasters to immigrate to America, and the family became so closely identified with the iron industry that there was a common New England expression; "Where you find an ironworks, there you will find a Leonard."

James Grover was a resident of Gravesend, Long Island, and with a number of associates secured, in 1665, a patent from Governor Nichols for the so-called "Monmouth Tract," which grant was later confirmed by Governor Carteret, minus certain privileges contained in the original document. Grover soon became the town miller under agreement to keep the mill in good repair, and to grind the corn for the inhabitants of Middletown. The corn mill with its dam and mill pond had been built about eighteen months before Grover took it over, as is indicated by a deed dated December 25, 1669, in which "the mill damme" and pond and Swimming River are mentioned. It is quite likely that the first ironworks used this same water power. Some authorities try to place its location on the Shrewsbury River, while others claim it was between Hope River (or Brook) and Darling Branch, and still others fix its site at Tinton Falls. A deed dated June 7, 1701, calls for land in Middletown between Burden's Brook and Jumping Brook and adjoining the "iron works." There is no trace of the first ironworks to be seen today, so that it is not possible to go further than designate a small territory somewhere within whose bounds this pioneer establishment was located; namely, Middletown and Shrewsbury townships in Monmouth County.

Shrewsbury Furnace

On October 25, 1676, Colonel Lewis Morris and his "associates in the Iron Works" obtained a patent from the East Jersey Proprietors for 3540 acres of land on the Shrewsbury River, between the branches of Swimming River and Falls River. The deed specifically conveyed the right

to dig, delve, and carry away all such mines for Iron as they shall find or see fit to dig and carry away to the iron works, or that shall be found in that tract of land that lies enclosed between the southeast branch of the Raritan river and the Whale pond on the sea side, and is bounded from thence by the sea and branch of the sea to the eastward to the Raritan river, he or they paying all such just damages to the owners of the land where they shall dig mine, as shall be judged is done by trespass of cattle or otherwise sustained by the carting and carrying of the said mine to the work.¹

From this it is clear that the Grover works were either on this tract, or on one of the other parcels which Morris bought from him, and that the raw material used was bog ore found in the neighborhood. In a deed to Jedediah Allen of Shrewsbury in 1701, mention is made of a piece of land on the west of "iron-min-bogg."

These works were considered of such importance to the general public that by an act of the Legislature of the 6th of April, 1676, on the petition of Colonel Morris, the lands and work belonging properly to the Iron Works, shall or may be rated [tax] free for seven years, excepting in extraordinary cases, as war or the like.

In a paper entitled, *The Present State of the Colony of West-Jersey, in America. September, Anno Dom. 1681*² is the following notation:

For Minerals within the Earth, they have not had Time to search; only, there are Iron-Mines,—and a Furnace, and Forging Mill already set up in East-Jersey, where they Make Iron.

George Scot in *The Model of the Government of the Province of East New Jersey*, published in 1685 and reprinted in Whitehead's *East Jersey under the Proprietary Governments*, in describing the Town of Shrewsbury, says:

There is within its Jurisdiction Colonel Morris his Manours, being of . . . thousand Acres, wherein are his Iron Mills, his Manours, and divers other buildings for his Servants and de-

¹ From *East Jersey Records*, B., p. 155, quoted in W. A. Whitehead, *East Jersey under the Proprietary Governments*, p. 92.

² *Pennsylvania Magazine of History*, XVIII, p. 159.

New Jersey Forges and Furnaces

pendents there, together with 60 or 70 *Negroes* about the Mill and Husbandry in that Plantation.

From Barber & Howe's *Historical Collection of New Jersey*, we learn that

Tinton Falls, $2\frac{1}{2}$ miles SW. of Shrewsbury, is on a branch of Navisink river, and contains about 25 dwellings, a furnace, a grist and saw mill, 2 stores.

We know very little of the further history of this early ironworks. Oldmixon in *The British Empire in America*, published in 1708, says

Between this Town [Shrewsbury] and Middletown is an Iron Work; but we do not understand it has been any great Benefit to the Proprietors.

None of the records show what type of iron was produced at these works, the East Jersey proprietors in 1684 saying that there was "good iron" made at "the Smelting furnace and forge already set up in the colony."

Colonel Lewis Morris of the Barbadoes was a brother of Captain Richard Morris, who had, in 1681, received a grant of 3000 acres of land on "Haerlem river," to which the name Morrisania was afterwards given. At the death of Richard, Colonel Lewis Morris came to New York and assumed the guardianship of his brother's infant son, who later became one of the outstanding figures in the affairs of the colony. Colonel Morris obtained other grants of land in New Jersey, besides the Shrewsbury Patent above noted, including one, in 1681, for 1000 acres of land along the Delaware River in the vicinity of Finn's Point, which, in 1685, he exchanged for an equal amount of land on Alloway's Creek. Colonel Morris died in May, 1691, and his nephew, Lewis (later Governor Morris), son of Richard, eventually obtained possession of his estate. During his lifetime Colonel Morris had conveyed and sold various tracts of land to others, among them being one, in 1689, for 330 acres at Passage Point, or Maramson Neck, to Lewis, son of Thomas Morris, with a reservation of the privilege of landing vessels on the shore front and the right of wagons and beasts of burden to pass to and from the shore. The products of the furnace were carted through Shrewsbury and over the Rumson Road to this landing at Passage Point.

Governor Lewis Morris went to England in 1734 to endeavor to have the Ministry right some of the wrongs inflicted upon the colony by Governor Crosby, and also to induce Parliament to encourage the making of cast iron and the growing of hemp.

Shrewsbury Furnace

In 1741, while he was governor of the province, the Council and Assembly presented a petition requesting the removal of the duties imposed on iron imported to England from the American Colonies. He forwarded this petition to the Board of Trade with a favorable recommendation. It was stated that the American iron had been pronounced "to Equal if not Excell in quality the Best Swedish Iron," and that by the removal of these import duties and the allowance of a bounty, the large debt with Great Britain annually incurred to foreign countries for iron would be greatly reduced and domestic production greatly increased.

In the will of Governor Lewis Morris, which was proved in 1746, the testator mentions his "mannour of Tinton," negroes and cattle as well as the "privileges, liberties, mines, and minerals" on the estate, but nothing is said about a furnace, forge, or ironworks.³ From this it may be inferred that these works had been abandoned before his death.

³ The will is quoted in full in *The Papers of Lewis Morris*, (*Collections of the New Jersey Historical Society*, IV, pp. 323-29).

SPARTA FORGES

Sussex County

AT ONE time or another there were five forges operating at the "Head of the Wallkill," in and about Sparta, but only one of them was established in the eighteenth century. As was the case in other localities, these forges were sometimes operated by one of the store-keepers or gristmill owners, and their activities are thus greatly confused.

The earliest of these forges, located about one mile from Ogdensburg and a mile and a half above Franklin Furnace, was built by Robert Ogden. As he died in 1787, the forge must have been built sometime before that date. At the beginning of the nineteenth century, and until his death in 1805, it was operated by Major Elias Ogden, making bar iron and blacksmith's iron. The ore came from the Ogden Mine, which also supplied Hopewell Forge and a number of the other ironworks in Morris County. The tract of land on which this forge was located contained 999 acres and was taken up by Azariah Dunham and John Johnson in 1788, the forge itself being excluded at that time. Peter McKee of New York appears to have been the next owner, followed by Cole & Decker and Northrup & Ludlum. In 1810, Joseph Northrup sold his half share to Dan Hurd. Isaac Hurd inherited his father's share and Judge R. R. Morris inherited the interest of his uncle, James Ludlum, and later bought out the other moiety. Judge Morris operated the plant forging anchors, and during this time it was known as the Morris Anchor Works. The property came in to possession of James B. Titman sometime after 1855, and was sold by the latter to Poppenhausen & Co. in 1867.

The forge and dam just below the "Head of the Wallkill" was started in 1804 by John Lennington and was later owned by James Morrow. It is called in some old deeds the "Washaway Forge" from the fact that it was washed away when the dam broke.

The third forge had the following owners: James Morrow, Thomas Lannington (until 1814), James Ludlum and Stephen Lyon, Judge R. R. Morris, and James B. Titman. It was operated until 1867.

Stephen Hurd, a brother of Dan, erected the fourth forge about

Sparta Forges

1822. After the death of Hurd, Lewis Sherman married his widow and continued the forge for a number of years.

The fifth forge was built by Robert Sinai, of New York, in 1827, and about 1830 was purchased by James Decker and Lewis Sherman, it having been previously operated by Stephen Lyon and Joseph Young. In 1836 Decker and Sherman took Nelson Hunt of Vermont into the partnership. The latter successfully introduced the manufacture of anchors in these works and soon all the other forges in the neighborhood were also making anchors. This forge continued intermittently in operation until about the year 1865 and was especially active during the Civil War under James L. Decker.

The products of the Sparta forges consisted of tire and blacksmith's iron, "blooms," and "octagon" iron as well as anchor forgings. The blooms were carted to Rockaway, principally to Colonel Joseph Jackson's rolling mill, and the other articles to New York.

SPEEDWELL FURNACE

Burlington County

SPEEDWELL FURNACE was located three miles south of Chatsworth on the east branch of Wading River in Burlington County. The Speedwell Tract on which the furnace was erected and from which it took its name was in the center of the New Jersey Pine Belt, crossed only by Indian trails and far removed from civilization. From a brief of title made by United States Senator John C. Ten Eyck in 1865 we learn that it was originally surveyed in 1760 to Thomas Lawrie, Daniel Randolph, and William Hendrickson, under rights to make such surveys obtained from Daniel Ellis and William Hewlings. Just before the Revolution it passed to Daniel Randolph, who soon built a sawmill thereon, long known as "Randle's Mill," or "Randolph's Mill," and later as "Speedwell Mill." In 1778, Daniel sold the sawmill and Speedwell Tract to his brother Benjamin, who at that time was living in Philadelphia. This is one of the many tracts of land in the wilds of New Jersey, the deed for which was never recorded and was lost during the Revolution. Benjamin Randolph's claim to the property then rested entirely on (a) the fact that his brother yielded possession and moved to Allentown and later to Freehold, where he kept an inn, (b) that he exercised every act of ownership, and (c) that none of the heirs of Daniel Randolph who resided in the vicinity ever disputed the title, nor did Daniel, even after the death of his brother, lay any claim to the tract.

In the *New Jersey Gazette*, February 17, 1779, Benjamin Randolph advertised the property for sale or rent because "the local situation of the owner renders it impossible for him to attend to it properly." Besides the mill and out-buildings, there were pine lands, cedar swamps, and "near two hundred acres of iron ore, as good as the State affords," together with about seven hundred acres of West Jersey rights, not yet taken up.

The property was sold, but to whom is not known, nor is it essential, since we subsequently learn that the purchaser did not comply with the terms of the agreement and the property reverted to Randolph. In December, 1780, he offered the same for rent

Speedwell Furnace

stating that the sawed lumber may be rafted to deep water, to be loaded on vessels, or it may be hauled eight miles to a landing on a "branch of Ancocus," whence it can be brought directly to Philadelphia. He further described the property as "a good seat for a Furnace, with a great quantity of Coal-Wood and Ore belonging thereto." Thomas Dungan and Jacob Hufty next took title to the property by deed dated February 11, 1781, but it was again returned to Randolph, this time under foreclosure proceedings and a sheriff's deed of December 4, 1783.

Benjamin Randolph now built the Speedwell Furnace and a dwelling house. In an old account book recently found by Mr. N. R. Ewan is an index of the names entered therein, but unfortunately the accounts themselves are lost. Among the items listed is the following:

Sale of Iron on Acct.—Benj. Randolph
Speedwell Furnace.

This confirms the fact that this furnace was built during his lifetime. While he maintained his residence at Speedwell until his death, during the last two years it was as tenant, since on May 29, 1789, he conveyed title to the estate to his daughter, Anna, in consideration of her having previously conveyed to his use several houses and lots in the City of Philadelphia of which "he was only tenant for life by courtesy, and which vested in her in fee by descent as heir-at-law of her deceased mother." After her father's death, which occurred December 19, 1791, Anna Randolph purchased from Thomas Cooper 1273 acres of land adjoining the estate, as appears by a deed dated October 27, 1792.

In the tax returns for Northampton township, Burlington County, beginning in 1795, Anna Randolph is assessed for a furnace and 2270 acres of land. (The earlier tax returns are lost.)

Immediately after her father's death, Anna Randolph leased the furnace to her brother-in-law John Jacobs, a sawyer, who came to Speedwell in 1779 as overseer of the sawmill and later had charge of both the sawmill and the ironworks. He operated the furnace on a parole lease from year to year and carried on the works as tenant until January 14, 1797, when he failed and moved to Georgia. Anna Randolph about this time moved to Morristown, New Jersey, where she resided the rest of her life. John Barnhart now took a lease on the whole property for one year merely to protect it from intruders.

The chief interest which attaches to Speedwell is its association

New Jersey Forges and Furnaces

with a man whose handiwork in another line has quite recently been brought to the attention of collectors and historians. Little was known of Benjamin Randolph until Dr. S. W. Woodhouse, Jr., called attention to his artistic production in furniture and uncovered some important facts in connection with his life and activities. Practically nothing is definitely known as to his early life. He first appears in Philadelphia annals in 1768 when, as a worker in wood, he furnished certain of the woodwork for the new almshouse then being erected at Tenth and Spruce Streets. J.L.Bishop says, "Benjamin Randolph at the Golden Eagle Chestnut street, in 1770, manufactured wooden buttons of apple, holly and laurel wood hard and clear." He is next noticed as a chair maker "at the Sign of the Golden Eagle on Chestnut Street between Third and Fourth Streets, Philadelphia." It was here that Thomas Jefferson stopped on his first visit to Philadelphia in 1775.

Randolph was a member of the Philadelphia City Troop and participated with this organization in the Battles of Trenton and Princeton. His patriotism is further attested by the advertisement which appeared in the *Pennsylvania Evening Post*, May 6, 1777, as follows:

Holsters, pistols, carbines, swords for the Light-Horse wanted immediately. Inquire of Benjamin Randolph in Chestnut Street.

He remained in Philadelphia apparently until it was occupied by the British in September, 1777, and then probably took up his temporary residence with his brother Daniel at Speedwell, returning to Philadelphia after the British evacuation in June 1778. In connection with the settlement of the estate in 1782 of James Randolph, or James Fitz Randolph as styled in his will, one of the large landowners of Monmouth County, he gives his address as Chestnut street, Philadelphia. In a notice in the *Pennsylvania Evening Post*, November 7, 1782, he announces his intention of leaving the state and is next found serving notice through the *Pennsylvania Gazette*, October 15, 1783, that the executors of James Randolph "will attend at the house of Tobias Hendrickson in Freehold from the first of November next to the first of March ensuing, . . . after that day they do not intend to receive any account whatever against said estate, it being inconvenient for Benjamin Randolph to attend so far from home." It has not been established exactly when he left Philadelphia, but on September 1, 1784, he described himself in a deed as "formerly of Philadelphia,



BOUNDARY STONE OF THE SPEEDWELL TRACT

Speedwell Furnace

but now of the City of Burlington, Merchant." Since the Speedwell property was in other hands from 1781 to 1785, it did not become his permanent domicile until after the latter date. The tract was now carefully surveyed, and in the woods about a half mile to the north of the road from Chatsworth to New Gretna is a large stone marker bearing the initials B R and the date 1785. This has been used for many years as the base point for subsequent surveys in this section.

On February 18, 1762, Benjamin Randolph married Ann Brumage (Bromwich) at St. Paul's Church, Philadelphia.¹ His second wife was Mary Wilkinson, daughter of Nathaniel Wilkinson, of Springfield township, Burlington County, and widow of William Fenimore, who died in 1785. On the latter marriage it was agreed by a prenuptial verbal agreement that neither of them would intermeddle with the estate belonging to the other. In consequence of this arrangement Benjamin Randolph left a legacy of only £20 to his widow. To a niece Margaretta Robins, daughter of Moses Robins, one of the soldiers with Captain Huddy at Toms River when it was attacked by the British in 1782, he left £50. His daughter Anna inherited two-thirds of the balance of his estate and Francis Ford, the wife of Gabriel H. Ford, the other third. Francis Ford was a ward of Benjamin Randolph and the daughter of Gionvanni Gualdo, an Italian nobleman, who died at Randolph's house in Philadelphia in 1772. Ford married Randolph's ward in 1790, and moved into what is now known as Washington's Headquarters at Morristown, New Jersey.

Randolph's greatest claim to fame, however, is, as stated above, in connection with the very fine pieces of furniture that have, it is claimed, been identified as his craftsmanship, a single chair having recently sold at auction for \$33,000, and two others at \$9,000 and \$15,000 respectively. Other pieces of furniture that have been identified as made by Randolph are the portable writing desk on which Thomas Jefferson wrote the draft of the Declaration of Independence and the boxes in which the papers of the Continental Congress were kept.²

To a man who had spent so many years in a large city in contact with men of business and culture, it is hard to imagine a more desolate and dreary place than Speedwell. It is quite true that for recreation there was plenty of gunning and fishing, but without good companions these are not particularly inviting sports. The

¹ *Pennsylvania Archives*, Second Series, IX, 446.

² *Antiques*, XI, 368.

New Jersey Forges and Furnaces

country was sparsely settled, the villages were small, and the workmen could not be treated on an equality with the ironmaster. The roads were about as bad as could be imagined and thus it was difficult for guests to pay visits. In the winter time the country was barren, while flies and mosquitoes made life miserable in the summer. Notwithstanding all these discomforts, Randolph seems to have been contented. His daughter, who lived with him, remained on the tract for five or six years after her father's death.

Continuing the history of Speedwell Furnace, we find that on July 14, 1798, Anna Randolph leased the property to Joseph Walker and John Youle, who continued its operation until Walker's death in 1813. Youle then assumed the lease for a term of seven years at an annual rental of \$550, the lessee also paying the taxes. The previous rental had been fifty dollars a month during each blast. Walker was assessed for the land, a furnace, and two forge fires until 1809, when Youle's name appears on the tax assessment list with 100 acres of improved land, 4000 acres of unimproved land and a furnace.

In 1802, John Youle, "iron founder of New York City," began buying lands in the Pine Belt. His first purchase was from George and William Ashbridge and was located on Wading River, opposite John Leek's Landing and abutting on the main stage road between Little Egg Harbor (Tuckerton) and Philadelphia. On the property which was divided by the road from Bodine's Tavern to Martha Furnace, was afterwards the site of the Wading River Forge. Three years later Youle purchased from Joseph Walker a one-half interest in "slitting mills, dams, races, water lanes and waterways, etc," which the latter had in 1802 purchased from William Ashbridge. On June 10, 1816, John Youle executed a quit-deed for all his holdings in New Jersey in favor of his son John Youle, Jr., but the deed does not name any particular properties.

From 1820 to 1829, Mark Richards operated the furnace as a tenant. When he gave it up, one of his workmen was put into the dwelling house "as a mere tenant, at will, paying no rent." This was done at the request of the owner as it was a common practice for "squatters" to settle on unprotected lands in this section and cut down the wood.

There was now an interval of nearly five years during which the furnace was idle. On December 23, 1833, Samuel Richards, who was also operating the Weymouth Furnace, purchased the Speedwell Tract including the ironworks. He operated the plant intermittently until his death in 1839. The heirs, however, allowed the



THE BENJAMIN RANDOLPH HOUSE

Speedwell Furnace

furnace to go into decay, and finally in 1850 sold most of the property to James McCambridge, who also acquired many other acres of land in this vicinity. The estate was now divided into smaller parcels, some of which are included in the present "Whar-ton Tract" and others passed to Joseph B. Dobbins.

The tract on which the furnace stood passed to Stephen Lee, who had married McCambridge's sister. It has remained in the Lee family ever since. The base of the old furnace stack is still intact and large quantities of slag cover the adjoining lands. The two dams, one of which was the furnace dam, and the other used for the forges and sawmill, are existent, but in a dilapidated state. The ore pits located about a mile down the stream are now covered with cranberry bogs.

The principal product of the Speedwell Furnace, as far as known, was pig iron. It was shipped chiefly to New York City and the towns along the Hudson River, being transported by canal boats or scows by way of the West Branch and Wading River to Great Bay, where it was loaded in sailing vessels for the trip up the coast. Recently the writer found a cast-iron hearth and iron lintel which were made at Speedwell, and has been able definitely to identify the house which Randolph built and occupied during his ownership of the property, although the building has since been much changed from its original appearance.

SPEEDWELL IRON WORKS

Morris County

SHORTLY before the Revolution, Captain Jacob Arnold and Captain Thomas Kinney built a furnace and slitting mill on the Whippany River in Morris County which was in later years destined to become famous because of its connection with several outstanding events. There was also a forge connected with these works. In a deed from Samuel Tuthill to John P. Losey in 1803 mention is made of a bridge that crossed the Rockaway River a little above where the old Speedwell forge formerly stood, indicating that the furnace, which was then in operation, and the old forge were located at some distance from each other.

The firm of Arnold & Kinney for a number of years before the Revolution conducted a large general store at Morristown. Jacob Arnold was the owner of Arnold's Tavern at Morristown, made famous from its association with General Washington, who used it as his headquarters on his first encampment there in January, 1777.

Both Arnold and Kinney were prominent in the affairs of the county. The former at the head of a troop of horse, known as "Arnold's Light Horse," took an active part in the Revolution, a detachment of his troop serving as bodyguard for Governor Livingston; the latter, who was Captain of the Morris County militia, was designated to deliver William Franklin, the last royal governor, into the custody of Governor Trumbull of Connecticut. It was while engaged in this service that Kinney was charged with "loitering" on the road and was brought before the Provincial Congress to explain the delay. After an examination he was exonerated of any misconduct as he was able to show that the delay was unavoidable. The Legislature awarded him and his guard a total of £112/7/15 for their services. There is a tradition that Thomas Kinney was an Englishman of high scientific attainments and that he came to America before the Revolution to investigate its mineral resources. It is barely possible that the charge that he had delayed the journey of Governor William Franklin to Connecticut had its origin in his supposed leanings towards the English

Speedwell Iron Works

cause. Arnold and Kinney each served a term as sheriff of Morris County, and the former was a member of the General Assembly in 1784, 1785, 1789, and 1790.

It is a belief that these men did not actually operate the ironworks themselves, but that they had some kind of an agreement with others. This is borne out by a bond and warrant dated May 17, 1781, wherein Michael Tennery is bound to Thomas Kinney in the penal sum of £60 in Spanish milled dollars at 7s, 6d each, to be paid by the said Tennery by "Twenty three hundred Weight of good Barr Iron, or the full value there of" before the first day of May next ensuing, and "One hundred and one Half Quarters, weight of Iron of the like Quality aforesaid or the value thereof, Annually," being in lieu of interest.¹

Not very long after building their ironworks, Arnold and Kinney failed. After the failure their respective shares were sold by the Sheriff, that of Arnold being bought by Dr. Timothy Johnes, son of Rev. Timothy Johnes, the father-in-law of Colonel Jacob Ford, Jr., whose widow was the hostess of General Washington during the second encampment at Morristown, 1779-80. In 1807, the property was sold to Stephen Vail. The Kinney interest was sold to James C. Canfield, William Canfield, and Stephen Vail. In 1814 Vail came into a majority control of the property and, under his direction, after being converted into a foundry, it became an important factor in the iron industry, and continued in operation until 1864.

The earliest published notice of these works which has been located was found in the *Pennsylvania Packet*, October 27, 1785. In an advertisement for an Irish servant who had run away from William Tilton in Philadelphia, it is stated that

It is likely he is gone to Speedwell Furnace, New Jersey, as he was in company the day before he went away with one M'Dede, who went out of town near about the same time, and said he was going to that place.

The boiler used in the steam vessel *Savannah*, the first to cross the Atlantic Ocean under both sail and steam, in 1819, was made at Speedwell Iron Works.

In 1850, George Vail and I. A. Canfield, trading as George Vail & Co., were operating the Speedwell Iron Works as a foundry,

¹ *Proceedings New Jersey Historical Society*, Third Series, VIII, 162.

New Jersey Forges and Furnaces

making heavy forgings, wrought iron screws for presses, locomotive driving wheels, horse-power sugar mills, etc.

It was in one of the old buildings near the Speedwell Iron Works that Samuel F. B. Morse, aided and financed by Alfred Vail, constructed and perfected the first electro-magnetic telegraph.

SPLIT ROCK BLOOMERY OR DIXON'S FORGE

Morris County

THE Split Rock Bloomery, located on Beaver Lake about four miles northwest of Boonton, was built, according to Bishop, about 1790¹ by Ebenezer Ferrand. The land on which this plant was situated was part of a tract located by James Parker and Andrew Bell, and originally the survey also included the Durham Forge lands. Pearse says a slitting mill at Split Rock² was owned by David Ogden in 1770 and was the first one to be built in the Province.³

The property was bought by Colonel Lemuel Cobb and formed part of a 3000 acre tract at Split Rock which was eventually devised to his three heirs, Andrew B. Cobb, Mrs. W. C. H. Waddel and Mrs. Benjamin Howell. In the division of the estate, the forge fell to Andrew B. Cobb, who greatly enlarged and improved it.

The next definite information which we have of the works at this place is found in *Dover History*, where it is stated that in 1816 Lemuel Cobb was operating a forge of two fires. In the tax list of Pequannock township for 1822, John Dixon is assessed for two forge fires at Split Rock, at which time it was known as Dixon's Forge.

A. B. Cobb was running an ironworks at this place in 1850, which is probably the one Professor Cook refers to as having been built in 1837.⁴ The last charcoal blast furnace built in the state was erected at Split Rock about 1862, but was soon abandoned.

¹ J. L. Bishop, *History of American Manufactures*, I, 543.

² The name "Split Rock" is supposed to have originated from the character of the rocks in the bed of the Beaver Brook, where it passed between rocks apparently split by the action of the stream.

³ J. B. Pearse, *Iron Manufacture*, p. 71. This is probably confused with the Old Boonton Works.

⁴ *New Jersey Geological Survey*, 1910, p. 3.

SPOTSWOOD FORGES

Middlesex County

THERE is much confusion about the ironworks at Spotswood, but from a careful study of all available data the writer is convinced that there were in the early days two forges operated on the Manalapan River.

Peter Ten Eyck (or Eick) built several sawmills and gristmills on this stream as early as 1750, having obtained an agreement with Lewis Johnston, John Johnston, and other large landowners in the vicinity that they would protect him to the extent that no other dam should be erected on the river, except possibly for a gristmill. In an agreement between Peter Corne (Corney) of Spotswood and Lewis Johnston and his associates made in 1762, mention is made of sundry mills which Peter Ten Eyck (Eick) had already erected and of a dam he had thrown across the Manalapan River.¹ It is probable that one of these "sundry mills" was a forge. In 1760, Ten Eyck made over some of his property to Cornelius Low of Raritan, John Johnston of Amboy, and Joseph Forman, a New York merchant. A little later Ten Eyck conveyed to Dirck Brinckerhoff² 2408 acres of land on the north side of Manalapan River, near the "old indian mill-dam," together with all "the rights members and appurtenances thereof And one full and Equal undivided fourth Part of all houses out-houses mills forges for making Bar Iron buildings and all other Improvements. . . ."

The next important notice of Ten Eyck was that of the Sheriff of Middlesex County offering the property for sale in the following advertisement, which appeared in the *Pennsylvania Gazette*, October 11, 1764:

To be sold at public vendue on Saturday the 3d of November, on the premises, one moiety of half part of a certain tract of land and premises, situate, lying and being in Spotswood on each side of Manalpan river, containing by estimation 2000 acres, together with a grist mill, saw-mill and forge and appurtenances thereunto belonging . . . taken in execution at

¹ S. S. O. *Deed Book D 3*, p. 142.

² S. S. O. *Deed Book A 3*, p. 107.

Spotswood Forges

suit of Philip Kearney, John Lefferts, Benjamin Watkins and John Watson and belonging to Peter Ten Eik . . .

JAMES BROOKS, Sheriff.

In the meantime Ten Eyck, who had been confined in jail, made his escape, whereupon the Sheriff offered a reward of ten pounds for his capture. He was described as "a lusty likely man, about 5 feet 10 inches high, fresh coloured, has dark hair, dwelt lately near Spotswood, in South Amboy, and owned a grist-mill and forge; was born in Somerset County, and sometime ago owned a grist-mill upon Raritan River." After the sheriff's sale, he was confined in the debtors' prison at Perth Amboy, and only obtained his release in 1765 by taking advantage of the Insolvent Debtors Act.

The next notice of this forge is contained in a public vendue to be held at the London Coffee House, Philadelphia, on March 25, 1767. The property is described as

A FORGE on Monolopon river, commonly called South river, not above four miles from the landing on said river, where boats go to New-York, and is the nearest but one to any landing, of any forge in the provinces of New-York, or New-Jersey, so that all the land carriage is but four miles; the forge has three fires, and is capable to make 120 tons of barr-iron per annum; . . . The only reason for disposing of the works, is, that the owners live at some distance and cannot well attend the overlooking the works. Pigs may be had at New-York at the market price, and will not cost above 6 or 7 s. per ton for transportation, till within four miles of the works; or if the purchasers should be inclinable to turn the works into a blomary, oar of a good quality is at hand in great quantities, and to be had on very reasonable terms. . . . Any person inclinable to purchase the premises before the day of sale, can apply to John Wilday, merchant, at Philadelphia; Derick Brinckerhoff and Co. at New York; David Williamson³ at Fresh Ponds; or to Robert Smylee on the premises, who will agree on very reasonable terms.

Pennsylvania Journal, February 19, 1767.

The property passed to Dirck Brinckerhoff and Peter Keteltas, who in 1771 conveyed it to Jeston Homfray, the consideration being "forty tons of good sufficient Merchantable refined Bar Iron" to be delivered to the grantors at New York. In this deed the land was described as on Manalapan River "near the old Indian mill dam," and was to include the forge or forges for making bar iron which might be thereon. Jeston Homfray, an Englishman,

³ David Williamson was an innkeeper on the old York Road between Cranbury and Amboy Ferry.

New Jersey Forges and Furnaces

who had been one of the managers for the American Iron Company at Charlotteburg, and later had a gristmill at Spotswood, died June 3, 1772. This purchase was made on behalf of James Perry of Woolverhampton in Staffordshire and Thomas Hayes of Bristol, both in England. Shortly after Jeston Homfray's death, his eldest son and heir, Charles, conveyed the properties to Perry and Hayes⁴ who combined it with their own forge.

Of the other forge on the Manalapan River little was definitely known until quite recently. Dr. Carlos E. Godfrey of the Public Record Office of New Jersey has discovered a petition dated November 17, 1788, addressed to the Council and General Assembly by the attorneys for James Perry and Thomas Hayes in which is given a full account of their operations. From this manuscript we learn that in 1763 they "erected, at their sole Expende, Works at Spotswood, in the County of Middlesex & State of New Jersey for the manufacturing of Bar Iron & Flower—In the purchasing, stocking & completing of which they expended about ten Thousand Pounds." In this enterprise Miles Sherbrooke (Shearbrook) who was a "Partner in Trade with your Petitioners, was equally interested with them in carrying on the said Works and in the Stock in Trade, employed there; altho' no ways interested in, or invested with a Title to the Premises on which the said works were erected."⁵

Neither Perry or Hayes who describe themselves as "Subjects of the King of Great Britain" evidently remained in New Jersey very long, for in the petition they state that they "have been residents in the Kingdom of England for upwards of twenty or twenty-five years last past" and, as the paper is dated 1788, this would make the date of their departure about in 1768. Sherbrook was the resident partner and Samuel Smyth the manager or agent. The latter left the state on the first of January 1777, having first taken an inventory which showed on hand "upwards of eighty Tons of refined Bar-Iron, between five and six Tons of Pig Iron, made into

⁴ S. S. O. *Deed Book F3*, p. 398.

A. H. Heuser, *The Forgotten General*, p. 83, says, "Humphries (Homfray) . . . left the employ of the Company controlling the Ringwood mines after two or three years of service. He went to Spotswood, near New Brunswick, where he built a blast furnace for himself, but he soon failed." Evidently the correspondent whom Mr. Heuser quoted had not seen the above transfer.

⁵ W. W. Clayton, *History of Union and Middlesex Counties*, p. 778, says that "An association of three men named Perry, Corne, and Hays, and known as the 'Forge Company' were manufacturing iron there for at least twenty-six years before the beginning of the Revolution." This does not agree with Perry's and Hayes' own statement as above given. Corne did have a gristmill on the Manalapan about this same time.

Spotswood Forges

Anchonies, about fifteen Tons of Pig Iron, about seven Hundred bushels of wheat, Rye and Indian Corn, ten Horses with sundry other articles. . . ."

About January 20, 1777, "fifty four Tons, eighteen Hundred Weight of Bar Iron, Part of the said eighty Tons, two Thousand six Hundred & eighty Pounds Weight of Beef two Thousand six Hundred & forty six Weight of Pork & two Kegs of Hogs Lard was taken by the second & third Battalions of the Militia of Middlesex under the Command of Col. John Nielson and appropriated to the Use of the Army of the United States."

Inquisitions having been found and final judgment entered thereon against Miles Sherbrooke (Shearbrook) for joining the English Army, his one-third share in "a valuable estate at Spotswood, consisting of forges, grist mills, dwelling-houses, carriages, stock, negroes &c" was advertised for sale by John Lloyd and William Scudder, Commissioners of Forfeited Estates in Middlesex County on September 27, 1779.⁶

Colonel Joseph Haight now became the owner, and in the following year advertised:

TO BE SOLD

At Private Sale or RENTED, the estate at Spotswood, in the county of Middlesex, New-Jersey.

CONSISTING of two grist-mills, one saw mill, and the iron-works, with a large tract of land and a number of houses, all in tolerable good repair; they will be disposed of all together or separate, as may best suit. . . .

New Jersey Gazette, March 8, 1780.

Haight was a man of considerable prominence at the time. At the beginning of the Revolution he kept an inn at Burlington called the "Stage Boat." He was a Major in the Second Regiment of Burlington County Militia, of which Charles Read (see page 159) was Colonel and Thomas Reynolds was Lieutenant Colonel. When Reynolds was made Colonel of this regiment, owing to the disloyalty of Read, Joseph Haight was selected to take his command.

Perry and Hayes in their petition state "that great Waste has been committed in their said Estate by the said Col. Joseph Haight and other persons holding under the State; their Forges, one of their Grist Mills, Dams & most of their Out-Houses are burnt down or otherwise destroyed; their Timber from two Thousand Acres of Land is entirely cut down taken & carried away. . . ."

⁶ *New Jersey Archives*, Second Series, III, 574.

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As a result of these various depredations they estimated that their property, which in 1777 was worth not less than £10,000, was now reduced to less than £1500 in value. They petitioned the General Assembly to reimburse them for two-thirds of their losses. From this we can establish the fact that the forges went out of existence in 1780.

SQUIRE'S POINT FORGE

Sussex County

SQUIRE'S POINT FORGE, located near the source of Musconetcong Creek, was built by Martin Ryerson, George Reading, Daniel Reading, and Thomas Reading, about 1760. In 1765, these four partners offered the works for sale, stating that it was about seven miles from Oxford Furnace and the same distance from Union Furnace and twenty miles from Andover and Durham Furnaces.¹ At all of these furnaces a plentiful supply of pig iron could be obtained "at the easiest Rates." It was twenty-seven miles to New Brunswick, and from there the iron was carried by water to New York, while to reach the Philadelphia market required a land haul of forty miles. The forge contained two "fineries," a "chafery," and one hammer.

No sale seems to have taken place at this time and the works proved to be the financial downfall of the founders. The Readings, who were cousins of Martin Ryerson, became interested in the iron business through their contact with John Hackett of Andover and Union Furnaces, who married Elizabeth Reading, a sister.

George Reading was particularly hard pressed for money and in the *New York Gazette or Weekly Post Boy*, March 13, 1766, he listed a number of properties which he offered for sale at "Reasonable Rates" in order to raise money. Among the parcels listed was "an undivided fourth part of a forge situated on Musconetcong River, in the County of Sussex aforesaid, with about 2000 acres of woodland well timbered; being the same forge which was advertised some time ago in the *Pennsylvania Gazette*." No purchaser came forward in answer to this advertisement.

Much information regarding this forge is contained in a report of the arbitrators in the suit of *Ebenezer Cowell vs Martin Ryerson and the Readings* which was recently found by Dr. Carlos E. Godfrey among the records of the Hunterdon Inferior Court of Common Pleas for the year 1767. From the report, which is dated August 8th, 1767, it appears that Ebenezer Cowell "is not, nor Ever was part Owner of Squires Point Forge, nor of any part,

¹ *Pennsylvania Gazette*, May 16, 1765.

New Jersey Forges and Furnaces

parcel or Member thereof, but that during the time the said Ebenezer Cowell resided at the said Forge, he was in the employ of the aforesaid Martin Ryerson, George Reading, Daniel Reading and Thomas Reading in company, as Manager of the said Forge and works thereunto belonging." There is further evidence that he had acted in this capacity at least since 1763, and that he had from time to time borrowed various sums of money from Colonel Hackett of Union Iron Works, Abraham Van Duzen of New York City, Derick Brinkerhoff of New York City, and sundry other persons. It is also shown that the owners of the forge owed Cowell the sum of £600/13/6, Proclamation Money of New Jersey. The arbitrators who signed the report, all prominent men of the county, were Samuel Johnson of Bloomsbury Forge, one of the judges of Hunterdon County and father-in-law of Colonel Charles Stewart of General Washington's staff, Alexander Chambers, a wood turner and chair maker of Trenton and one of its foremost citizens, and Stacy Potts, in whose house the Hessian General Rahl died after the Battle of Trenton.

Ebenezer Cowell was a blacksmith by trade and was particularly skillful in making gun locks and firearms. During the Revolution he was especially active in repairing guns of the Continental troops located in the vicinity of Trenton, employing for that purpose all the local mechanics he could get and paying them out of his own funds. When the British entered Trenton late in 1776, they ransacked and destroyed his shop.

The next notice of the Squire's Point Forge is an unsigned advertisement in the *New York Journal or General Advertiser*, December 14, 1769, stating that the large well-built forge called Squire's Point Forge with three fires and one hammer, together with a good gristmill and sawmill at one end of the forge dam, all located on the "Muskenitung River," Sussex County, together with out-buildings, workmen's houses, and eighteen hundred acres of land, would be sold on December 26, 1769. Garret Rapalje purchased this forge, but if he operated it at all, it was only for a short time.

About this time the financial affairs of the four men who established Squire's Point Forge became very acute. The iron business for a number of years had been poor, and plants brought extremely low prices when offered for sale. Thomas Reading made the announcement in the *Pennsylvania Gazette*, August 30, 1770, that he had engaged in the ironworks trade "for a number of years past, by which, meeting with many losses, and, by hardness of the times,

Squire's Point Forge

is unable to procure money to pay the debts contracted at said works, whereby they, and the lands belonging to them, which cost several Thousand Pounds, have been sold, by execution, for only as many Hundreds, . . ." Martin Ryerson in the *Pennsylvania Gazette*, September 13, 1770, announced that having "for some years past been unfortunately concerned in trade and ironworks, by which means large debts were contracted, and, through scarcity of money, was obliged to mortgage the greatest part of my lands; the rest seized by execution, and, by the hardness of times, they will not sell for half price, and actions still going on against me," he would apply to the Legislature for relief.

In the meantime, Daniel Reading was accidentally shot, and died October 15, 1768. George Reading called a meeting of his creditors on August 5, 1772.

Returning to the story of the Squire's Point Forge, we find an advertisement issued by Rapalje in 1773, in which he offered to sell the ironworks, sawmill and gristmill with 1800 acres of land, late the property of Ryerson and Reading, for £1200.² In the following year, an ironworks was offered for sale which to all appearances was the Squire's Point Forge, although not mentioned by name in the public notice. Rapalje says that this forge was capable of making 250 tons of bar iron or more a year, and that it was then rented for £250 per annum.

Three years later, he again tried to sell "A Valuable Plantation and Iron Works situated in Morris and Sussex Counties, New Jersey, at the head of Muskenykunck River," stating that it contained four fires and two hammers, and was capable of making 300 tons of bar iron annually.

On March 4, 1778, Rapalje announced that he intended moving to West Florida, "chief of his family being there now," and among various tracts of land which he desired to sell was one containing 1800 acres of land situated on the Musconetcong River at a place called Squire's Point, on which was "an old forge and a very good grist mill." After this, all trace of Squire's Point Forge is lost, and it is quite likely that it was abandoned about this time, since it was then called an "old forge."

² *New York Gazette*, November 22, 1773.

STANHOPE FORGES AND FURNACE

Sussex County

FROM the best information available it is believed that the upper forge on the Musconetcong River at Stanhope was built by Jonathan or Silas Dickerson between 1780 and 1800, and that the forge just below the village was erected by David Sealy Canfield about 1801. Dickerson continued to operate his forge until his death, which occurred in an accident during the course of completion of a nail factory in 1807, said to have been the first in the state for making machine-cut nails. Canfield moved back to Morristown about 1810. Joseph Jackson took over the operation of the Dickerson forge, which at that time contained two forge fires, while Israel Canfield and Co. continued the forge of David Sealy Canfield. About 1816 or 1817, Abram Hathaway and Josiah Munson succeeded Jackson, and a few years later Gamaliel Bartlett operated this forge and continued until 1825. Hathaway had formerly conducted a sawmill at Bear Swamp, near Columbia, while Munson moved to Lockwood about 1820.

The later history of these forges is not definitely known, other than that they were all abandoned about 1840, on account of the supply of wood being exhausted.

About 1841, Edwin Post, as the agent of the Sussex Iron Company, acquired land on which these forges stood, and erected the first two anthracite blast furnaces in New Jersey, each with a capacity of ten tons of iron daily. In 1841, Joseph Jackson testified before the Committee of Manufacturers of Congress that "There have been some experiments on a large scale made at Stanhope, near my place, to smelt our magnetic ores, that abound in my country, with anthracite coal; but, unfortunately for the iron interests, they made use of almost the only poor ore we have, and thereby failed to produce a good article of pig iron."¹ This failure was also ascribed to the fact that the air blast, which was operated by water power, was not as hot a blast as was necessary. After much experimenting with various ores, and the substitution

¹ S. Hazard, *United States Register*, VI, 262.

Stanhope Forges

of steam power to operate the air blast, success attended their efforts.

An unfortunate accident occurred in 1853, which put the Sussex Iron Company out of business for some time. While experimenting with a process for working up the franklinite ore, an explosion destroyed the entire plant. Later two new anthracite blast furnaces were built, one of which has survived and now belongs to the Singer Sewing Machine Co.

STERLING IRON WORKS

Formerly in Bergen County

IN A consideration of the Sterling Iron Works we come to the serious dispute which arose between the governments of New York and New Jersey as to the proper location of the boundary line between these provinces, a question which was not actually settled until 1774, when a Commission actually marked the line. Prior to 1772, a part of what is now Orange county, New York, was claimed by Bergen County, New Jersey, and property in this angle was assessed by the New Jersey authorities. On September 26, 1772, the General Assembly of New Jersey confirmed to the proprietors of the Sterling Iron Works sundry tracts of lands which had been purchased from the Proprietors of East Jersey, or from certain individuals whose title came from this source. Among those mentioned in the act were Cornelius Board, from whom the first tract was derived, Timothy Ward, William Smith, William Hawkhurst, and John Burling, all of whom were at one time or another actively connected with the Sterling Works. The amount of the above lands released to the jurisdiction of New York totaled 1361½ acres. Bishop, Pearse, and Swank all place the Sterling Iron Works in New York,¹ although in its early history the owners actually believed it to be in the Province of New Jersey.

The Sterling Furnace is said to have been built by Ward & Colton in 1751,² while the Sterling Forge was built in the following year³ by Abel Noble of Bucks County, Pennsylvania. Macgrane Coxe, in an address delivered in 1906⁴ before the New York Society of Daughters of the Revolution, stated that, while this date may be correct so far as it refers to a furnace, there was undoubtedly an ironworks known as the Sterling Iron Works in existence at this same location at a considerably earlier period. As early as 1745, mention is made of ironworks at Sterling in the field books of

¹ J. M. Swank, *Iron in All Ages*, p. 119, qualifies this statement by saying that at the time Acrelius was writing Sterling Furnace was "probably embraced within the boundaries of New Jersey."

² *Ibid.*, p. 102; J. L. Bishop, *History of American Manufactures*, I, 528.

³ *Ibid.*, I, 528.

⁴ Macgrane Coxe, *Sterling Furnace and West Point*. Privately printed. New York, 1906.

Sterling Iron Works

Charles Clinton,⁵ a well-known surveyor of that section. He does not state who erected them nor how long they continued operations.

From an advertisement by the executors of the estate of James Burling, deceased, which appeared in the *New York Mercury*, October 20, 1755, it would appear that there were others associated with Ward and Colton in this enterprise. This notice runs as follows:

To be sold at public vendue, on the 18th day of next month, at the Merchants-Coffee-House, the sale to begin at 11 o'clock, 1/8, and 2/3 d's of a 1/6th part, of Sterling-Furnace, with 1/8 and 2/3 d's of a 1/6th part of the dwelling-house, coal-house, and about 600 acres of land, being the part belonging to the estate of the late James Burling, deceased. Said furnace and land lies in Bergen County, in the eastern division of New-Jersey: It is well supplied with oar, within a few roods of the furnace, and plenty of water in the driest season. Also to be sold at publick vendue, at the same time, 7/8ths of a forge, called the New-Forge, with two fire-places in it, in good order, for making bar-iron, with about 100 acres of land belonging to it, and lies about 3 miles from the above premisses, information may be had of John Burling in New-York, or Samuel Burling, in Burlington. Also to be sold, or let, on a lease for a term of years, by the said John and Samuel Burling, one eighth, and one twelfth part of the above said furnace and land. Octo. 18, 1755.

Samuel Burling was a resident of Burlington, and the son of John Burling, wheelwright, of that city and later of Bucks County, Pennsylvania.

The outcome of this sale is not known, but four years later Hawxhurst & Noble advertised for workmen of various kinds.

Good Encouragement given by HAWXHURST and NOBLE, at Sterling Iron Works, for Wood-cutters, Colliers, Refiners of Pig and Drawers of Bar Iron. Also a Person well recommended for driving a four Horse-Stage between said Works and the landing.

N.B. Pig and Bar Iron and Sundry English Goods to be sold by William Hawxhurst in New-York.

New York Mercury, December 24, 1759.

The partnership between Hawxhurst⁶ & Noble in the Sterling Iron Works expired October 19, 1760, and William Hawxhurst an-

⁵ *Proceedings of New Jersey Historical Society*, Third Series, IV, 69.

⁶ William Hawxhurst, of New York, was a merchant dealing in "pig-iron, anchors, potash, kettles, negroe wenchies and children, horses, &c." In 1776, he was "an Addresser of Lord and Sir. William Howe," signifying his intention and desire to accept allegiance to the British crown. See Sabin, *Loyalists of the American Revolution*, I, 526.

New Jersey Forges and Furnaces

nounced that he would carry on the works alone. He advertised for "a Founder, Smith, Anchor Smiths, Miners, Carpenters, Colliers, Wood Cutters, Carters and Common Labourers," and stated that he could make anchors of any weight under 1000 lbs. on short notice. Substantiating this claim, the following item appeared in one of the New York papers:

New York, June 4—We hear that on Wednesday last an Anchor of Fourteen Hundred and a Half, made at Mr. Hawxhurst's Sterling Iron Works, was delivered in this City for one of his Majesty's Sloops here. The Anchor was seen by several Merchants and Masters of Ships, and much liked, and is supposed to be the largest that was ever made in this Government. It is hoped the Merchants of these Colonies will encourage the Improvements of the valuable Manufactory, seeing it is arrived to so considerable a perfection.

Swank gives an extended account of the Sterling Iron Works, but many of the statements made appear to be at variance with the contemporary newspaper items. The following advertisement which appeared in 1775 furnishes much information as to the furnace and adjacent forge:

STERLING IRON WORKS, TO BE LEASED;

OR from the first Day of April next, Three-Fourths of the STERLING FURNACE with the Improvements thereon, situated in Bergen County, New-Jersey, now in the Possession of Peter Townsend. Also the Whole of the large Charlotte Forge, within three Miles of the Furnace, now in the Possession of Abel Noble, at which Place the famous Anchor Works have been carried on for many Years past;—as those Iron Works are well known to exceed any on the Continent, both for their Improvements, and every other Advantage, as well as the superior Quality of the Iron, renders it unnecessary to enter into particular Description of them. For Terms, and further Particulars, apply to the Subscribers in New-York.

JOHN WILLIAM SMITH, and
SAMUEL BURLING

N.B.—Whoever is inclinable to Lease the above-mentioned Works, may probably have an Opportunity of purchasing or leasing the remaining Part of the Furnace, of the present Tenant.

New York Journal, February 16, 1775.

The publicity caused by this advertisement brought out a rejoinder from Townsend that he was the owner of a one-quarter interest in the forge and anchor works "and of all the Furnace and

Sterling Iron Works

New Mine, with the meadows and buildings thereunto belonging." He also gave notice that he was not disposed to give way to any person and warned anyone intending to purchase in accordance with the Smith-Burling advertisement that he would protect his rights. From the following advertisement which appeared in the *New York Journal*, December 28, 1775, it is evident that both he and Noble were forced out of the older works and had become associated with William Hawxhurst in a new plant:

A FORGE with Six Fires,

To be built near Sterling for Mess'srs Noble and Townsend who will give Great Encouragement to any person who will erect and compleat the same. Anyone that inclines to undertake it, must give in their proposals before the 25th of January, as immediately after that, it is intended to set about cutting and drawing the timber, as the roughness of the country makes it necessary to collect the timber while the snow is on the ground, the person that applies ought to be strong handed. For further particulars apply to William Hawxhurst in New York.

N.B. Good encouragement will be given to those who understand making Steel from Pig metal, in the German method, as the above FORGE is designed to be employed in that business.

According to the *New York Gazette and Weekly Mercury*, April 8, 1776, the new works were expected to be in operation by the following June. The second works is usually credited to Peter Townsend, Jr., and later came into possession of Captain Solomon Townsend, who was a cousin of Peter Townsend, Jr., and also his son-in-law. The later history of these works undoubtedly belongs to the iron industry of New York.

The iron chain weighing 186 tons, which was stretched across the Hudson River to obstruct its passage by the British navy, was forged at the Sterling Iron Works of Noble Townsend & Co. Two other attempts to stretch a chain across the river had failed, but this one stood as a mute barrier until 1783. The links of this chain were made of iron $2\frac{1}{4}$ to $3\frac{1}{2}$ inches square and two to three and one-half feet in length. The links were forged at Sterling and taken to the river at West Point in sections, where they were welded together.

Many workmen were necessary to operate the Sterling Works. A list was prepared to accompany a petition for exemption from military duty and gives in detail the number of men required in

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the various operations. It took 182 men to operate the furnace, forge, and steel works. In making charcoal for the three works, fifty-five wood cutters, ten master coalers, forty helpers, sixteen charcoal carters, and five charcoal stokers were required. The ore was handled into the furnace by three ore raisers, two ore carters, two ore burners and two mine "powders." To operate the furnace, two filler-men, one gutter-man, one bank man and two founders were needed. The forges required ten forge men on ordinary work and ten forge men at the anchor forge. The steel works required one carter, four forge men, and six steel makers. Besides these each works had its own manager, blacksmith, and carpenter, while one clerk kept the accounts for all the plants.

TRENTON FORGE AND IRON WORKS

Hunterdon County

now

Mercer County

THE first ironworks at "Trent's town" were erected, according to William Nelson, sometime between 1723 and 1729.¹ James Trent, on June 20, 1729, conveyed to Anthony Morris of Philadelphia, "Brewer," for a nominal consideration of five shillings, two-thirds of one-half of two pieces of land "contiguous on Assunpink Creek, in the township of Trenton in Hunterdon County, New Jersey, and of the Forge Iron Works and Buildings thereon with Water Well, Bellows, Hamer, Anvil, and other utensils to the Forge belonging." This fixes the date as prior to 1729, and an earlier deed (1723) excepts "the Grist-mill and other mills erected on Assunpink brook." The owners were now Thomas Lambert and James Trent, each with a one-sixth share, while John Porterfield and Anthony Morris each had a one-third interest.

The partners entered into an agreement that they would bear the expenses in proportion to their respective holdings and in the event of a disagreement between them on the policies to be pursued, the question or questions involved were to be arbitrated by five "honest persons," who were to render an opinion within thirty days after the matter had been laid before them. For a violation of any of the terms of the agreement, they each bound themselves to pay a penalty of £500. Each of the partners was to furnish to the works "pig mettall," coal, and other necessary stocks in proportion to his share of interest, and after the expenses of the workmen had been met, were to receive a proportionate part of the bar iron produced. It was agreed that each of the partners "in disposing of any Iron to be made at the Forge aforesaid shall not directly or indirectly undersell or sell at a lower or lesser price than what the said partys" or a majority of them should at their meetings order and fix, without first offering the same for the use of the company at the price so fixed. This is perhaps one of the earliest known recorded agreements in American industry for the fixing of

¹ William Nelson, *The Beginning of the Iron Industry in Trenton, N. J.*

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prices of a staple commodity. So binding was this partnership that not one of them could sell his interest to an outsider without first giving the others an opportunity to purchase it. In the event of their refusal to purchase, it could be sold only to a stranger or strangers acceptable to the remaining partners.

We know little of the operations of this plant. A freshet carried away the dam in the Spring of 1733. Dr. Godfrey in his article in the *State Gazette*, January 1, 1915, states that it was rebuilt on another site farther up the creek. That the forge was certainly in existence and probably in operation after 1733 is confirmed by the offer of Elizabeth Biles, daughter of Thomas Lambert, and one of his four heirs, to sell a one-sixteenth part of the forge at Trenton in 1739. The exact location of the earliest works is not known, but from the records we learn that it was on the north side of Assunpink Creek, west of the present Warren Street, and that the landed property lay on both sides of the creek. Dr. Godfrey says that the site of the new forge was on the Assunpink at what is now State Street and Chestnut Avenue.

On January 26, 1731-32, Isaac Harrow, an English blacksmith, purchased a lot from James Trent on Petty's run and erected a "Planing mill and Blade mill" near the Old Barracks on the tract. In 1734² he advertised a list of the articles which were offered "at as reasonable Rates as any that come from England." Among the products of these works were pans and ladles, spades and shovels, axes of all kinds, knives, "sheers," saws for various purposes, and carpenters' and coopers' tools. He also offered "all sorts of Iron Plates fit for Bell-making, or any other Use."

Harrow died a few years later and in his will, dated "7 mo. 28, 1738," which was probated in 1741, he names his wife and William Morris as executors. John Cox soon afterwards became the owner of most of the Harrow real estate, but the transfer does not appear to have included the mill property, which was evidently purchased by Anthony Morris, either individually or in conjunction with his brother, William Morris. According to an advertisement the property was offered for sale and was described as follows:

To be sold, in Trenton, by public Vendue, on the 3d of September next, *The Iron Plaiting Works*, Smith's Shop, and all the Tools and Molds, for making Frying-pans, Dripping-Pans &c. said Works being now fit for Use: Also a good new Dwelling-house, Lot and Out Houses, all of the Estate of Isaac Harrow, deceased. The Conditions of Payment to be

² *American Weekly Mercury*, September 5-12, 1734.

Trenton Forge

known of Anthony Morris, in Philadelphia, or of William Morris, in Trenton.

Pennsylvania Gazette, August 15, 1745.

The Harrow Mill was sold on October 17, 1745³ to Joseph Highby and the latter immediately deeded it to Anthony Morris, who on November 11, 1745, sold it to Benjamin Yard.⁴

The next notice of the iron industry in Trenton is found in the report made by John Allen, Sheriff of Hunterdon County, in response to Governor Belcher's Proclamation of 1750.⁵ He reported

One Plateing Mill Scituate in Trenton in the County of Hunterdon⁶ said to belong to Benjamin Yard, which to my Certain knowledge was Erected before the said Twenty fourth day of June last past and is now in Use.

Also one Furnis for making Steel belonging to the above sd Yard which Also to my own knowledge was Erected before the Twenty fourth day of June last past but is not now in use. And after a strict Inquiry I can Discover no other Mills or Engine for Slitting or rolling of Iron or plateing forges which work a Tilt hamer of Furnaces for making of steel within my County.

The plating mill was the one purchased from Anthony Morris, while the steel furnace, which was located opposite the Barracks, in what is now Willow street, Trenton, was built by Yard soon after acquiring the old works. He continued to operate these until 1762, when they were sold to "Owen Biddle, a watchmaker, and Timothy Matlack, merchant, both of Philadelphia."⁷ Three years later, Biddle stated that his half of the works would be offered for sale at the London Coffee House at six o'clock in the evening on Saturday, September 14th, 1765.⁸ There was only half an acre of ground attached to the Steel Works. The location at the head of tide water in the Delaware river was cited as advantageous to receive "Iron from a Number of Iron-Works which are situated above it on Delaware," and that the steel could be transported

³ This may have been the date of the deed drawn after the public vendue of September 3, as above mentioned.

⁴ This information is recited in the deed from Yard to Owen Biddle and Timothy Matlack, dated September 17, 1762.

⁵ *New Jersey Archives*, First Series, VII, 560.

⁶ Trenton is now in Mercer County.

⁷ William Nelson, *The Beginning of the Iron Industry in Trenton, N. J.* It does not seem to be generally known that Timothy Matlack ever had any connection with the steel industry. In 1780, he published an oration which he delivered before the American Philosophical Society adding some interesting footnotes. See Dr. Stackhouse's *Timothy Matlack, Patriot and Soldier*.

⁸ *Pennsylvania Gazette*, August 29, 1765.

New Jersey Forges and Furnaces

by water to Philadelphia, or any other market, at moderate expense.

About this time John Pemberton had a half interest in the Trenton steel mill, having purchased the Timothy Matlack share. He was a merchant in Philadelphia and was selling the products of the Trenton Steel mill, "in fagots or blisters." None of the partners appeared to have been satisfied with its operations, as evidenced by the numerous advertisements offering varying interests in the plant for sale, the last one, dated November 27, 1776, and signed by Stephen Sewell and John Pemberton, including title to the entire works. This advertisement stated that the works occupied "a substantial stone building" and "may be entered upon at New Year's Day." During this time the plant had been leased to practical ironmasters, among them one John Zane.

That the steel turned out at Trenton was of a superior quality is evidenced by the guarantee contained in the following advertisement:

AMERICAN STEEL

MANUFACTURED by John Zane, at Trenton, esteem'd quite equal, if not better in quality than what is imported from England, may be had of

BOWNE and RICKMAN

At their store in the house of Peter Clopper, facing the Fly-market, on reasonable terms, in half faggots, or blister'd, by the Ct. wt.

N.B. If on tryal any bar proves faulty, it will be received back, and the money return'd.

Supplement to New York Gazette and The Weekly Mercury,
June 29, 1772.

In a public notice a year later they mention steel manufactured by John Zane of West Jersey.

John Pemberton, in his advertisements, indicated more fully the uses for which the Trenton steel was adapted, thus:

TO BE SOLD BY JOHN PEMBERTON

Bar-Iron, STEEL manufactured at Trenton, both in the Blister, and neatly drawn and faggoted, and fine Bars for Springs to Carriages, Mill-Saws, Mortars and Pestles, and Cart and Waggon Boxes.

Pennsylvania Gazette, June 8, 1774.

The next name met with in the iron industry in Trenton is that of Samuel Henry, whom Stryker, in *Trenton One Hundred Years*

Trenton Forge

Ago, says owned an ironworks which he built in 1769, near where State street now crosses the Assunpink. These works were afterwards owned and operated by Bernard Hanlon, who continued the business for some time after the Revolution. When Henry died in 1784, this property was described as "the old iron works."

Samuel Henry was accused of uttering remarks which were derogatory to the Continental cause and was ordered by the Provincial Congress to be committed to the common jail of Hunterdon County. He soon presented a petition to the Congress disclaiming any intention of disloyalty and offering to give any reasonable satisfaction in his power to govern his conduct in line with the wishes of Congress. His petition was granted and he was ordered freed from custody upon signing the usual parole and giving a bond for £2000 that he would remove to his mills in Trenton and stay within two miles thereof.

Stacy Potts is credited with having operated an iron mill before 1776, and Stryker gives its location as on Petty's Run, back of the Old Barracks, near Warren Street. This was the same plant that was started by Isaac Harrow, as already noted, but it certainly was not operated during the occupation of Trenton by the Hessians in 1776, and was apparently abandoned early in the Revolution. It was in this works that John Fitch is said to have, at one time, made files. At another time Fitch had a gun factory on King Street in Trenton in which nearly sixty men were employed.⁹

⁹ *A History of Trenton 1679-1929*, I, 108.

UNION WORKS OR FORGE

Burlington County

UNION FORGE, located in Woodland township, one mile from Chatsworth (formerly Shamong), on a branch of Wading River and adjoining the "Speedwell Tract," was built about 1800¹ by William Cook, Sr., of Chesterfield township, Burlington County. When Washington township was formed in November, 1802, the Union Forge Pond was mentioned as forming one of its boundaries. According to the tax duplicates for the year 1806, William Cook, Sr., was assessed for 1500 acres of unimproved land valued at two dollars per hundred acres and for two forge fires, and three years later the assessment was jointly in the name of William Cook, Sr., and William Cook, Jr. The works then consisted of a forge and a slitting mill.

Shortly after this, the "Union Forge Tract" passed to William Fenimore who in 1812² deeded the property to Anthony Sykes Earl of New Hanover township, Burlington County, for a consideration of \$4300. It consisted of three tracts, containing respectively 3000, 1566, and seven and one-quarter acres, and included "all the premises now belonging to the Union Forge Tract." On Horner's *Map of New Jersey* (1855), the Union Works is shown as a furnace, which is clearly an error, since according to all records and tradition it was always a forge.

The site of the forge is on the road from Chatsworth to Vincetown opposite the ruins of the Chatsworth Club House and is well marked by a dam and "sheeting," still in good state of repair.

This forge, which was a small one, made bar iron, using pig iron from Speedwell Furnace, and was operated for many years. No authentic details as to its subsequent owners or date of abandonment are available. The water power was in 1843 used to operate a sawmill.

¹ *Tax Duplicates* in Public Record Office, Trenton, N. J. According to Woodward & Hageman, *History of Burlington and Mercer Counties*, page 509, it was built by Thomas and Samuel Richards, but they give no authority for this statement; Nelson, *New Jersey Coast for Three Centuries*, II, 413, says it was established by S. Jones and J. Biddle.

² *Burlington County Deeds*, Book X, p. 605.

UNION IRON WORKS AND HIGH BRIDGE OR SOLITUDE FORGE

Hunterdon County

ON DECEMBER 1, 1742,¹ William Allen purchased from the West New Jersey Society part of the "Tract of Land Commonly Called the One Hundred Thousand Acre Tract in Hunterdon County," containing 3,100 acres, besides allowances for highways, the consideration being £300 sterling. The deed specifically grants the privilege to

Dig Search Work for Raise and Get all Such Iron Ore Lead ore Copper ore Tin ore and all other Ores and Minerals whatsoever which Can Shall or May be found Digged Gotten up or raised in or upon the said hereby demised Hereditaments and premisses or any part or parcel thereof.

From this it will be seen that this purchase was presumably made with the idea of developing its mineral resources, as the above-quoted clause does not appear in any of the subsequent deeds which Allen obtained from the Society.

The description of the boundaries of the above tract commences with "Vizt Beginning at a Large Black Oak Marked on four Sides Standing about half a Mile from the forge that now is [in] the Course." Mention is also made of Smalley's Creek and the Lebanon Road. From this it is quite clear that there was a forge on the tract when Allen and Turner made their purchase. By whom it was built is not known, as the title to the property had been heretofore vested in the West Jersey Society.

The next large purchase which Allen and Turner made in Hunterdon County contained 7383 acres and was bought from the executors of the Thomas Byerly Estate on September 1, 1749.² The tract extended for five miles along the Delaware River and its northerly boundary was the Musconetcong Creek. There does not appear to have been any ironworks erected on this land. On October 21, 1752, William Allen and Joseph Turner, for a consideration

¹ S. S. O. *Deed Book GG*, p. 340.

² S. S. O. *Deed Book K*, p. 429.

New Jersey Forges and Furnaces

of £3997/8/0, "Current money of New York," obtained from West New Jersey a tract of 10,849 acres, "Strict measure," in Hunterdon County.³

The tract embraced within the above conveyances and sundry other purchases which Allen and Turner had made "extended from Van Syckle's to German Valley, including High Bridge and Clarks-ville."⁴

At that time there were a number of families located on the lands, who claimed title as the "earliest inhabitants to the parts occupied." This led to many ejectment suits and a series of riots and disorders which occupied the attention of the government for a number of years. The principle involved was a denial of the right of the Crown to patent the province of New Jersey to James, Duke of York, and his subsequent conveyance to Berkeley and Carteret as against purchase by these early inhabitants of title direct from the Indians. Many of the points involved were similar to those contained in the famous "Clinker Rights Bill"—a celebrated case in the court of Chancery of New Jersey.⁵ Allen and Turner, however, very wisely made the best settlements possible with these contestants, after finding that any action to the contrary would have involved a prolonged struggle and delay in developing the tracts.

The Union Furnace was erected by William Allen soon after he had made his first purchase noted above. It stood on one of the Exton farms in Union township, formerly a part of Bethlehem township, about two miles west of High Bridge. The power to operate the furnace was obtained from Spruce Run. According to an advertisement in the *Pennsylvania Journal*, January 11, 1742-3, Isaac Pearson offered for sale,

Also two other Tracts of Land containing 500 Acres in Bethlehem, a small distance from the Furnace that William Allen is building.

While the name of Joseph Turner is not mentioned in the original deed of December 1, 1742, nor in the above advertisement, it is certain that he became interested in these works either at the time or soon afterwards.

³ S. S. O. *Deed Book K*, p. 194.

⁴ Dr. Mott in *Proceedings of New Jersey Historical Society*, Second Series, V, 79.

⁵ *A Bill in Chancery of New Jersey, at the Suit of John Earl of Stair, and other Proprietors of the Eastern-Division of New Jersey; etc.*, printed in 1747 and *An Answer to a Bill in the Chancery of New Jersey*, published in 1752.

Union Iron Works

William Allen was an outstanding figure in colonial days and one of the richest men in Pennsylvania. Besides being Mayor of Philadelphia (1735-1736) and member of the Assembly in 1731-1739 and again in 1759-1775, he was Chief Justice of Pennsylvania (1750-1774). In 1762 he was selected as one of the commissioners to settle the boundary line between the provinces of New York and New Jersey. Besides his judicial activities, he was extensively engaged in commercial affairs, the house of Allen and Turner being one of the most important in America. Their interests covered the field of land purchases, the iron industry, sugar manufacturing, and shipping. In public affairs he appears as one of the founders of the Pennsylvania Hospital, and one of the first trustees of "The Public Academy of Philadelphia" (now the University of Pennsylvania). He was an aristocrat and could not countenance any of the activities or ideas of the middle class. This, undoubtedly, had something to do with his antagonism to Benjamin Franklin, who was an outspoken advocate of the common people. Allen openly charged Franklin with "playing double" on the Stamp Act, while serving as agent of the colony of Pennsylvania in England, and later spoke of him as "that Goliath." Another reason for Allen's pronounced opposition to Franklin may be found, as Dr. Buckenham has shown, in the manner in which the latter attempted to supplant Allen as Grand Master of the Masonic Lodge of Pennsylvania.

While opposed to the tactics of the British Government in its colonial policy, Allen believed in redressing the wrongs by peaceful persuasion. He firmly opposed the Declaration of Independence, and upon its adoption, accepted royal protection. He was subsequently attainted for treason. Sabin states, "A wag of the time said he joined the royal side because the Continental Congress presumed to declare the American States free and independent without first asking the consent, and obtaining the approbation, of himself and wise family."

In order to save his property for his family, the shares which he devised to his sons, John and James, who had since died, were, by codicil dated December 1, 1779, willed to their respective children, and William's portion was given absolutely to James Hamilton. The lots which he owned in the central part of Philadelphia were deeded "for divers good causes and considerations" to Edward Shippen, Jr. and Tench Coxe, with a life interest vested in himself. He died in 1780.

The children of William Allen were as follows:

New Jersey Forges and Furnaces

John, who married Mary Johnson of New York and died in 1778.

Andrew, one time Attorney-General of Pennsylvania, who married Sarah, daughter of William Coxe of New Jersey.

James, who married Elizabeth Lawrence, was a lawyer and a pupil of Edward Shippen. His death occurred in 1778.

Ann Allen, who became the second wife of John Penn, Governor of Pennsylvania, 1763-1771 and 1773-1776. Governor Penn was the son of Richard Penn, the youngest brother of William, the founder.

Margaret Allen, who married James DeLancey of New York.

Joseph Turner was also a prominent man in Pennsylvania affairs, a member of Franklin's Junto, and a member of the Provincial Council. He was a particular friend of Governor John Penn. He died July 25, 1783, unmarried, and left his estate to the children of his sister Mary (who had married Captain James Oswald), namely, Elizabeth, who became the second wife of Chief Justice Benjamin Chew, and Margaret, who married Frederick Smythe, Chief Justice of New Jersey.

The next mention of the Union Iron Works is in a deposition made by Colonel John Hackett on January 4, 1749, regarding some difficulties which he and his men had had with several of those who had already settled "on the Lands of Messrs. Allen & Turner (being Supposed to be part of the Three Thousand Acres by them purchased of the Society)." He states that he succeeded in arresting some of these squatters and finally placing them in the jail at Trenton. While the prisoners were in the custody of a constable, a mob armed with clubs gathered, but failed to effect their release. On finding themselves defeated, they were much disappointed, and John Hackett said: "About a Worse thing, that was, the pulling Down and Destroying of the Furnace and Develling House."⁶

We are also certain the works were established before the twenty-fourth day of June, 1750, from the following certificate which Allen and Turner filed with Governor Belcher:

Seeing your Excellencys Proclamation requiring the owners of Every Mill or Engine for rolling or Slitting of Iron &c to Transmitt or Cause to be Delivered into the Secretarys Office at Burlington a particular account of their Scituations. *Pursuant* thereto, we the owners of a Certain Engine for Slitting and Rolling of Iron—report our Mill to be scituated on the south side of the south Branch of the river Rariton said to be in Bethlehem Township & in the County of Hunterdon

⁶ *New Jersey Archives*, First Series, VII, 378.

Union Iron Works

which was Erected before the 24th June Last past—But not at present in use, which Mill is the property of

Your Excellencys most Obedient Servts:

WILLIAM ALLEN & JOSEPH TURNER

Union Ironworks October 17th 1750.⁷

The ironworks, according to Acrelius, consisted of "two furnaces and two forges, each with two stacks. Also a trip-hammer and a flatting-hammer." The ore came from the mines at High Bridge which, again quoting Acrelius,⁸ is gotten about twenty feet deep, iron appears mixed with sulphur and copper. But below the surface, good and pure ore is found all along, that can be used in all sorts of ways."

The location of one of the original Union furnaces, as above noted, is on the road from Van Syckle's to High Bridge. The ruins of this old furnace are still visible (1929) and present a very picturesque appearance. For details of the second furnace, the reader is referred to the Norton Furnace.

The various mills which were erected were all included in The Union Iron Works, but in some of the early road records are spoken of as the Union Forge and in others as the Union Iron Works. These were managed for the owners by Colonel John Hackett, and among the *Durham Papers*⁹ is a letter dated Union Iron Works, December 19, 1754, and signed by John Hackett. In this letter, Colonel Hackett expresses a very optimistic opinion as to the quality of his product. He says:

Being confident of the goodness of our new iron have sent you five hundred of it to make a trial, assuring you at the same time you shall have whatever quantity of it you want, 20 shillings per ton less, than you can possibly get it from anywhere else.

In 1761, the works were called "Mr. Hackett's new furnace." Hackett died in 1766¹⁰ and, in order to clear the title to some properties which he bought in his own name with Company funds, a special act of the Legislature was passed. (See Andover Iron Works.)

Archibald Stewart, one of the administrators under the will of John Hackett, now seems to have acted as agent for Allen and

⁷ *New Jersey Archives*, First Series, VII, 560.

⁸ Israel Acrelius, *History of New Sweden*, p. 166.

⁹ Bucks County (Penna.) Historical Society.

¹⁰ According to his will, which is dated August 25, 1766, he left a wife, Elizabeth (Reading) Hackett, and a son Samuel.

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Turner and, in 1770, the forge, furnace and slitting mill were offered for rent. The advertisement reads as follows:

TO BE LETT for a TERM of YEARS.

.....
N. B. ALLEN and TURNER will also lett, for a Term of Years, their SLITTING-MILL and FORGE, with, or without, a FURNACE, together with all the Implements and Conveniences necessary for carrying on the IRON-BUSINESS; being the noted Union Iron-Work, in Hunterdon County, in West-Jersey, about 30 Miles nearer Philadelphia than Andover Iron-Works, and within that Distance from Brunswick, and equally convenient for the Philadelphia and New-York Markets.

Pennsylvania Gazette, October 4, 1770.

Robert Taylor at that time was the works manager, having entered the employ of the company about 1760 as bookkeeper, and became manager on Colonel Hackett's death. Taylor came to Bethlehem township as school teacher. Tradition says that it was the beautiful penmanship in a petition which he prepared, at the request of the ironworks employees, against some of their alleged wrongs, that attracted the attention of the proprietors to him. In 1769, he offered a reward for the return of a servant man who had run away from the Union Iron Works, giving us the first authentic information as to his greater authority, since none but the owners themselves or their managers ever advertised for runaways.

Robert Taylor was suspected of Loyalist sympathies in the early years of the Revolution, no doubt because of his previous close connection with William Allen and Joseph Turner. A warrant was issued for his appearance before the New Jersey Council of Safety on July 25, 1777, to take the Oath of Allegiance. He appeared before that body on the 26th and produced a certificate that he had taken the oath before Justice Johnson on May 28, 1777.

In the pre-Revolutionary days there had developed a considerable trade between the inhabitants at the Union Iron Works and the merchants in Philadelphia. To accommodate this trade, Joseph Burwell announced in December 1768 that he would run a stage to Philadelphia regularly every two weeks during the winter months and weekly during the other months. The road over which the stage traveled was, no doubt, through Sidney, Pittstown and Quaker-town, to Ringoes, and thence over the Old York Road to Coryell's Ferry (now Washington's Crossing) and Philadelphia.

Union Iron Works

These early stage drivers also carried the mail, delivered packages, did sundry errands in the city for their customers, and brought back the latest news. They were important personages in the local community and on the most friendly terms with the people along the route.

At the beginning of the Revolution, William Allen was not as outspoken in his denunciation of American Independence as he became at a later date, and on October 26, 1775, the Commissary of the Committee of Safety of Pennsylvania reported he had received "16-32 lb. cannon balls; 119-18 lbs; 29-9 lbs. and 11-6 pound cannon balls from Wm. Allen Esq'r".¹¹ (no doubt cast at Union Iron Works.) This was in response to an offer which the "Honorable William Allen, Esq., generously gives for the use of this Board, the half of a quantity of Canon Shot belonging to himself and Mr. Turner." The Board adopted a motion that "Mr. Andrew Allen, who made the tender, is deemed to return the thanks of this Board to the Honorable William Allen, Esq., for his generous donation, and to purchase of Mr. Turner his half of said Cannon and Swivel Shot."

There is direct evidence that slaves were extensively used at Union Iron Works in the early days. Dr. John W. Jordan tells of one owned by John Hackett of the Union Iron Works, which he sold in 1760, to the Moravians at Bethlehem, Pennsylvania, for fifty pounds.¹² Very early in the Revolution, all the slaves belonging to the plant (about forty in number) were sent to Virginia, because it was feared that they would be confiscated and sold for the benefit of the State.

As we have seen, there was a forge on the tract when William Allen made his purchase in 1742, which, according to J. P. Snell's *History of Hunterdon and Somerset Counties*, was established in 1700. By whom this was erected is not known, but from the fact that William Allen was building an ironworks in 1742-43, it is reasonably safe to assume that this old works was not in operation. Was this the forge to which the name "Solitude" was originally given?

When the property of William Allen and Joseph Turner was seized under the Confiscation Act, Robert Taylor was selected as one of the Commissioners to sell it for the benefit of the State. In the division of the property, he was allowed to purchase one of the forges and about 366 acres of land for £800. Some authorities

¹¹ *Minutes of the Provincial Council of Pennsylvania*, X, 364, 382.

¹² Quoted in *Forges and Furnaces of the Province of Pennsylvania*, p. 47.

New Jersey Forges and Furnaces

state that the ironworks was abandoned in 1778, and Snell records that iron making was not renewed at this point until 1851. That this is incorrect, the following quotation seems to prove:

NAIL RODS

Of a good quality and different sizes,

TO BE SOLD

By the Subscriber, at Union Iron-Works.

December 2, 1780. ROBERT TAYLOR.

New Jersey Gazette, December 6, 1780.

In the Hunterdon County Court minutes for the February Term, 1798, mention is made of an alteration "to the public or great road leading from the Union forge to Hacketts Town." At the October Term for the same year we find that the Court appointed surveyors to lay out a road in Bethlehem township which should join the "great road leading from the Union Iron Works to the hickory tavern¹³ aforesaid by Luther Colvins Mill in Bethlehem."¹⁴

The chief point of interest to us in these quotations is that the Union Forge and Union Iron Works are both mentioned as apparently active works, although the time was twenty years after their abandonment, according to general belief.

Tradition states that the buildings of the Union Iron Works in the early days served as a place of refuge for the inhabitants of the adjacent country against attacks by the Indians. During the French and Indian War (1755-1763), the women and children were left within the buildings during the day time while the men went about their occupations, or in search of the foe. At night all hands retired behind stone walls of the buildings ready to resist any attack.

Because of the threatening attitude of the populace of Philadelphia toward those who did not openly espouse the cause of Independence, John Allen moved his family to the Union Iron Works in January, 1777.¹⁵

James Allen in his *Diary* says, "My Brother John having been elected a member of the Provincial Congress of New Jersey, finding all opposition [to the Declaration of Independence] vain, soon left it & never returned."¹⁶ This congress met at Burlington, New Jersey, in June, 1776, and early in its deliberations received a petition from

¹³ Hickory tavern was at what is now called Duckworth Corner, three miles from Bloomsbury and two miles from Plattenburg.

¹⁴ Information furnished by Dr. Carlos E. Godfrey.

¹⁵ "Diary of James Allen Esq.," *Pennsylvania Magazine of History*, IX, 191.

¹⁶ *Ibid*, IX, 191.

Union Iron Works

sundry inhabitants of Hunterdon County requesting that the election of John Allen to the Congress be declared void because of his Tory principles. The Congress, after due consideration however, refused to take this step.

It seems strange that John Allen, who represented Hunterdon County in this Congress, should be a Pennsylvanian. Under the New Jersey election laws it was required that all inhabitants qualified to vote for a deputy to the Provincial Congress must have resided for at least one year in the county where such election was to be held, and, of course, the qualifications of a candidate for the office could not be any less. John Allen, the son of Chief Justice Allen, was always looked upon as a Philadelphian and as such was active in the Committee of Correspondence of that city up to June, 1776, when it was superseded by the Council of Safety. Under the New Jersey laws he had to be a resident of Hunterdon County from May, 1775, since the election was held on the fourth Monday in May, 1776.

That he never gave up his Pennsylvania citizenship is evidenced by the fact that while he accepted protection from Lord Howe at Trenton in December, 1776, no action was taken against him by the Council of Safety of New Jersey, although another John Allen, brother of Isaac Allen of Trenton, was "taken in arms" and his property confiscated for having taken the same action at about the same time. It remained for the Assembly of Pennsylvania to mention him specifically as one of those coming under the "Act of Attainder." This was in accordance with the well-defined policy among the colonies that each one should be responsible for the conduct of its own citizens. We will, however, leave the final settlement of this question to some future investigator since it does not especially pertain to the subject in hand.

From a historical viewpoint, it may be noted that the Union Iron Works was the place to which the last Royal Governor and Chief Justice of Pennsylvania were sent under parole. Congress had ordered the arrest of Governor John Penn and Chief Justice Benjamin Chew as persons inimical to the American cause, and directed that, if they refused to sign paroles, they should be sent under guard to Fredericksburg, Virginia. They both refused to sign, and all preparations were made to carry out the Congressional order, but before the execution of these orders the accused asked permission to be allowed to go to Union Iron Works in Hunterdon County as the place of their parole. The selection of this place was no doubt made at the suggestion of John Allen, who was Penn's brother-in-

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law, because it promised better quarters and also was nearer their families. While at Union Iron Works, the two distinguished prisoners occupied the house which Robert Taylor had built and to which the name "Solitude" had been given.

The presence of two such prominent Loyalist sympathizers within the borders of New Jersey caused the Council of Safety to direct the Governor to protest to Congress against their remaining within the State, requesting that they either be sent out of the State or "removed from their present situation to some more secure & better affected part of the State; and that the Executive Department of this State, have the disposal of them so far as respects the place of their residence."¹⁷ Governor Livingston, in accordance with the above, sent a letter, dated at Princeton, October 4, 1777, to the President of the Continental Congress protesting "against persons of their political caste and rank in life" being sent into New Jersey. He said that the region to which they had been sent "has been considerably disaffected, and still continues so, notwithstanding all our efforts, owing, we imagine, in part to be the interests, connection, and influence of Mr. John Allen, brother-in-law of Mr. Penn, who is now with the enemy." He requested that they be sent to some other part of the country.¹⁸

These prisoners were subsequently ordered to New England and in the *Minutes of the Council of Safety of New Jersey* for November 26, 1777, is the following resolution:

Agreed That the Officer who is to conduct John Penry¹⁹ & Benjamin Chew Esqr to Wooster be directed to purchase in some of the New England States for the use of this State 20,000 Flints.

However, before Lt. Col. Chamberlain, who had been designated to convoy them, had started on the journey, Congress granted them permission to remain in New Jersey.²⁰ After a ten months' sojourn at Union Iron Works, Congress directed that they be conveyed into the State of Pennsylvania and there discharged from their parole. This was done on June 29, 1778, as the danger from their being at liberty had passed and no overt act had been charged against them. Chew remained in Philadelphia and after the war became judge of the Court of Errors and Appeals of Pennsylvania, while Governor Penn sailed for England.

¹⁷ *Minutes of the Council of Safety of New Jersey*, p. 141.

¹⁸ *Selections from the Correspondence of the Executive of New Jersey, 1776-1786*, p. 101.

¹⁹ A misprint for "Penn."

²⁰ *Minutes of the Council of Safety of New Jersey*, p. 284.

Union Iron Works

The ore of the two mines from which the Union Iron Works drew its supply is high in sulphur, with about 50% of metallic iron, and is also high in titanitic acid. One of the mines, called Union Church or Van Syckle's Mine, was reopened by Cooper and Hewitt and the ore shipped to Durham Furnace. Dr. Fackenthal in speaking of the ore says, "One naturally wonders how those early charcoal furnaces with their crude air blasts found it possible to get good results from ores containing so high a percentage of this refractory element."

The present plant of the Taylor-Wharton Iron & Steel Company at High Bridge occupies part of the original Allen-Turner tract and is the direct successor of the old Union Iron Works. For over one hundred and fifty years the Taylor family has been directly connected with its management and has directed the many changes that have taken place in the character of the products made and the methods of production used due to the development of the art of iron making and business conditions.

WASHINGTON FURNACE OR BERGEN IRON WORKS

Monmouth County

now

Ocean County

IN 1814, Jesse Richards, of Batsto, and William Irwin erected a furnace at Bricksburg (known as Lakewood since 1880), which they called Washington Furnace.¹ The furnace was built on the site of an old sawmill erected in 1786, and long known as "The Three Partners' Mill."² The enterprise was not very successful and the furnace was abandoned about 1830.³ In 1832 or 1833, it was bought by Joseph W. Brick of Burlington County, and after being rebuilt was called Bergen Iron Works. These works were located just below the present south branch of the Metedeconk River, about where the old road from Toms River to Squankum crossed the stream. In later years the site was occupied by a gristmill and then by a silk mill. When the Bricksburg Land Company bought up the land around Lakewood and began to develop it into a high-grade resort, the silk mill was closed up and for a time the building was used as a community house. Subsequently the site was occupied by the water works of the borough.

On the death of Joseph W. Brick his property passed to his three daughters and two sons, George and Riley Allen Brick. The latter managed the works for the estate and, according to common report, the valuable business which Bergen Iron Works enjoyed in supplying water pipe to New York contractors was lost during his management. Campbell and Pharo continued the operation of the works until 1854, when it was moved to Amboy.

Adjoining the furnace of the Bergen Iron Works was a cupola

¹ William Nelson, *History of the New Jersey Coast for Three Centuries*, I, 413.

² G. Kobbe, *The New Jersey Coast and Pines*, p. 86. On Horner's *Map of New Jersey* (1855) the 3 Partners Forge is shown on the north bank of the south branch of the Metedeconk River east of the bridge on the Toms River-Freehold Road. The Bergen Iron Works Furnace is shown about a mile eastward on the same stream where the Toms River-Squankum Road crosses.

³ It is shown on Gordon's *Map of New Jersey* (1828).

Washington Furnace

for making castings. The high reputation which the castings made at this plant bore was due to a certain mixture of iron made from bog ore with iron imported from Scotland. A plank road ran from the works at Bricksburg (Lakewood) to a landing near Cedar Bridge on a branch of the Metedeconk River, from which place two schooners constantly plied to New York.

Mr. John W. Wainwright says the processes used in the smelting of the iron ore were so crude that the slag piles afforded a plentiful source of supply of charcoal for use of the workingmen's families. During the early fall the children of the neighborhood would gather the household supply of fuel for the winter.

Interesting "tokens" of the Bergen Iron Works, dated 1840, have been discovered recently. These were issued during the general suspension of specie payment from 1837 to 1842 and accepted at the company store as well as by storekeepers in the surrounding country.

WESTECUNK OR WEST CREEK OR STAFFORD FORGE

Monmouth County

now

Ocean County

THE Westecunk or Stafford Forge on the north branch of West Creek west of the present village of Staffordville was built in 1797, by John Lippincott.

Extensive buildings were erected and a large and successful business was carried on for ten years. The pig iron used in these works was carted from Martha and Speedwell Furnaces. On March 15, 1808,¹ John Lippincott, of Howell township, Monmouth County, conveyed to John Youle, or Youel, iron merchant of New York, Joseph Walker of Washington township, Burlington County, and Henry B. Kimble, of Stafford township, Monmouth County, sundry parcels of land in Burlington and Monmouth Counties, together with all of the water rights, etc., including "the forge, water works, drowned lands Iron house and every apparts unto the Said forge belonging." Two years later the property was advertised for sale and was described as:

For Sale, A Valuable Double Forge, With about Five Thousand Acres of Pine Land well Timbered, Situated in the township of Stafford, county of Monmouth, within 2 miles of a good landing, 4 miles from Tuckerton, on the post-road from Philadelphia. The Forge is nearly new, and in complete order.

True American (Trenton), March 5, 1810.

At that time Henry B. Kimble resided on the premises. In another notice the works are described as also about four miles from Manahawking and situated "on the main branch of Wistry bank Creek, and about two from navigable water," and was called Stafford Forge.² By this time Walker, who was also interested in the operation of Speedwell Furnace, had evidently sold out to Youle and shortly afterwards Kimble also conveyed his interest to Youle,

¹*Burlington County Deeds*, Book S, p. 574.

²*True American* (Trenton), March 12, 1810.



HAMMER AT STAFFORD FORGE

Westecunk Forge

since we find the latter later in the year executing a power-of-attorney to his son, John Youle, Jr., for all his holdings including the forge. Six years later (1816), the father conveyed "in fee" all of his real estate in New Jersey to John Youle, Jr.

Extensive improvements were now made, but the overhead charges were so large that the plant could not be made to show a profit, and after several years of intermittent activity was finally abandoned in 1838-9.³

Youle conveyed to Jesse Richards, about this time, all of his holdings, and the estate was eventually converted into a cranberry bog, under the name of the Stafford Forge Cranberry Bog. The old forge is also commemorated in the Stafford Forge Road running from the Bass River Road to the works. The hammer handles, used in the old forge, were in existence but a few years ago.

³ *Burlington County Deeds*, Book W3, p. 278 and Book M4, p. 63.

WEYMOUTH FURNACE

Gloucester County

now

Atlantic County

WEYMOUTH FURNACE, located in Hamilton township, on Great Egg Harbor River about six miles above May's Landing, was built shortly after 1800 by Charles Shoemaker, George Ashbridge, Morris Robeson, John Paul, and John M. Paul, who on November 6, 1800, had purchased from the West New Jersey Society, "the Great Egg Harbour Tract," lying on both sides of the Great Egg Harbor River.¹ The tract enclosed 85,973 acres, out of which 7913 acres were excepted, leaving a net area of 78,060 acres. The consideration in this purchase was \$28,000 payable in four years. Joseph Ball soon became associated in the enterprise, but whether this was before or after the furnace was built is not known. About the same time, as noticed under Martha Furnace, Messrs. Shoemaker, Ashbridge, the Pauls, and Robeson became the owners of four tracts of land on Great Egg Harbor River. These tracts are described as being on or near Deep Run and containing one hundred and sixty-seven acres. The following year Ashbridge and Shoemaker sold a one-sixth interest in Martha Furnace to Joseph M. Paul for \$4,000. Soon after the purchase of these lands, by a special act of the legislature, Morris Robeson, George Ashbridge, and associates were granted the rights to build and maintain a dam across Great Egg Harbor River, above the mouth of Great Run (now called Deep Run), and below the sawmill on Hospitality Branch "for the accommodation of the iron-works and other water-works."²

By 1802 a forge consisting of four fires and two hammers was completed. George Ashbridge was made the manager. In May, 1802, he advertised for "a full set of Forgemmen to work a New Forge, now erected and in complete order."³ The forge was described as containing four fires and two hammers and as being located on Great Egg Harbor River. The furnace was built about the same time, or a short time before.

¹ S. S. O. *Deed Book AV*, p. 68.

² *Sessions Laws of New Jersey*, 1801, p. 35, passed February 9, 1801.

³ *Trenton Federalist*, June 8, 1802.

Weymouth Furnace

Nelson says the furnace was built of stone quarried in the neighborhood and was twenty-five to thirty feet square at the top.⁴ The interior was lined with slate and the opening at the top was eight feet in diameter. By an inclined runway the materials for loading the furnace were carried to the tunnel head or top in wheelbarrows.

From the original builders the property passed about 1808 to Samuel Richards of Atsion Furnace.

In the *Martha Furnace Diary*, the first entry is as follows:

March 31, 1808—Finished taking Inventory of the personal property of Martha Furnace, when Mr. Evans accompanied Charles Shoemaker, George Ashbridge and Samuel Richards to Weymouth, in order to take an Inventory and appraisement of the property there.

Following George Ashbridge, Lewis M. Walker was manager of the works, and John Richards, a great-nephew of Col. William Richards of Batsto, was made assistant manager. Walker left Weymouth in 1819 and John Richards continued in charge until about 1830, when he joined his cousin, Thomas H. Richards, at Gloucester Furnace. He was succeeded by John C. Briggs, who in turn was followed in 1846 by William Moore. The latter came to Weymouth from Conshohocken, Pennsylvania, about the time the firm of Colwell and Bell, sons-in-law of Samuel Richards, were operating the works. In 1867 he was elected congressman from the district and from 1872 to 1874 served as state Senator from Atlantic County.

From several old account books of the Weymouth Furnace in possession of Thomas C. Stewart of Mays Landing, New Jersey, a grandson of Robert Stewart who was for many years manager of the Batsto estate, we learn that there was considerable trading between Weymouth, Hanover, Gloucester, Atsion, and Cumberland Furnaces and a very close contact between Etna and Weymouth Furnaces. The furnace store also played an important part in the community life. The daily entries in these books show that conditions here were very similar to those at Martha Furnace. Mention of training days, drunkenness, and the workings of the furnace and forges are frequently made. Many odd and interesting items are scattered through the daily notes. Among them are the following:

Feb. 25, 1818	A Beef Pedlar here today
March 9, "	Mr. Wheaton began to repair Boats this morning

⁴ William Nelson, *The New Jersey Coast in Three Centuries*, I, 411.

New Jersey Forges and Furnaces

March	13,	"	Launched the ore boat this Evening
"	25,	"	Aetna furnace Teams past here this evening with loads of goods from Martha Furnace
April	10,	"	Began to boat ore down the Cannal
June	3,	"	Training at Mays Landing. Nearly all came home Sober.
Oct.	31,	"	This day is called "Holly Eve" [Hal-low'e'en]
Jan.	2,	1819	Jacob Hoffman hung himself Twice but did not hang Long enough
"	6,	"	Seven waggons here with Pork, etc.
"	12,	"	Pork and corn came to-day
Feb.	22,	"	Thompson agreed to Coal by the hundred @ 12/6
May	10,	"	Training at Mays Landing. Several faught Wentling got hurt
"	15,	"	No molasses, coffee nor Sugar to-day for people
Oct.	22,	"	Tin Pedler here

Gordon says of Weymouth Furnace:

The furnace makes about 900 tons of casting annually: the forge having four fires and two hammers, makes about 200 tons bars iron, immediately from the ore. There are also a grist and saw mill, and buildings for the workmen, of whom 100 are constantly employed about the works, and the persons depending upon them for subsistence, average 600 annually. There are 85,000 acres of land pertaining to this establishment within which May's Landing is included. The works have a superabundant supply of water, during all seasons of the year.

At first the products of the various mills were hauled to Philadelphia by mule teams. About 1846 a tramway was built from the works to a wharf at May's Landing, the manufactured articles being loaded on cars and drawn by mules to the wharf on Great Egg Harbor River, where they were placed aboard sailing vessels and sent either to New York or Philadelphia.

On the death of Samuel Richards in 1842 the estate passed to his heirs, Sarah Ball, wife of Stephen Colwell, Elizabeth R., wife of W. Dwight Bell, and Hannah, wife of General James Nichols. The forge was destroyed by fire in 1862, and three years later the furnace suffered the same fate.

During its long career, the works produced a variety of articles, including stoves, cannon and cannon balls, and iron pipes. The war materials were made during the War of 1812, for both the army and navy, and many of the cannon could be seen along Delaware

Weymouth Furnace

Avenue, Philadelphia, a few years ago, doing duty as hitching posts. They were marked with the initial "W" on the butt.

The first iron water pipe laid in Philadelphia was made at Weymouth.⁵ It appears that the wooden water pipes then in use would not withstand the pressure of the water supplied in various parts of the city, and after experiments it was found that the cast-iron piping would overcome this difficulty. Therefore iron was substituted for wood as quickly as possible. Robeson & Paul appear to have been awarded by the "Watering Committee" the first contract in 1801 for this piping, amounting to \$128.62. Subsequent awards covered larger quantities and one of them called for fifty-six tons for the main laid in "Water Street between Vine Street and the Drawbridge." The iron pipes were made in all sizes from one and one-half inches to twenty inches in diameter.

In the light of present-day production, the daily output of pipes was extremely small. Only the best molten metal was used for making pipes. That there is nothing new in our present engineering practice on all large jobs of having the materials inspected at the works is evidenced by the methods used at Weymouth on the contracts for the Philadelphia Water Works. A pipe-testing machine and inspectors were sent periodically to the furnace and all pipes were rigidly tested before being shipped. Some of the comments found in the furnace books on the manufacture of pipes are interesting, as the following extracts show:

May	2, 1819	Made one Pipe and lost another (This was Sunday)
Sept.	21,	" Pipe good this evening
"	22,	" Made no Pipe on A/c of rain
Oct.	4,	" No Pipes this day bad iron
"	14,	" Iron good made 2 pipes
"	23,	" Made no Pipes, iron bad
"	24,	" Made 2 Pipes

The iron ore was dug out of the nearby swamp, called the "Bog Ore Swamp," and in 1818 a canal was made from the furnace to the "ore-ponds," in order that it could be loaded on scows and poled by two men to its destination. This canal is still visible and a few years ago some of the old scows could be pointed out.

From one of the old account books of Weymouth Furnace, we learn that the hearth as rebuilt in 1819 was four feet ten inches square; the distance from the bottom of the hearth to the beginning of the "cuvette" was twenty inches, and the pitch of the conical

⁵ K. H. Osborne, *Genealogy of the Robeson Family*, p. 91.

New Jersey Forges and Furnaces

inner wall was seven and one-quarter inches to the foot. The tuyère or air nozzle was thirteen inches above the hearthstone. It was a common practice in the early charcoal furnaces to use only one tuyère, whereas today in the modern blast furnace as many as twenty have been installed.

As at Batsto, Samuel Richards exercised paternalistic supervision over his employees. He built a meeting house in 1807 and provided other facilities for the families dependent on the works. The old meeting house, still in use, is a fine example of early construction with its hand-hewn cedar woodwork fastened with wooden pegs; a "ten-plate" stove provided the heat, while lard-oil lamps furnished the light. The building was intended to be non-sectarian, but was evidently chiefly used by the Methodists and Presbyterians.

In the early years of the nineteenth century metallic currency was very scarce, especially in the country districts. To meet this situation paper currency was issued not only by legally chartered banks, but also by "wildcat" banks, by associations and others. The amount issued was enormous and to make matters worse much of it was spurious. The city banks would not even receive some of this paper money for deposit and it found its way into the hands of brokers, gamblers and scalpers. Recently several pieces of paper money issued by The Bank of Steubenville, Ohio, came to the writer with the authoritative statement that they had been circulated among the employees by the Weymouth Company between 1820 and 1830 and were then generally accepted. It should be noted, however, that a very large part of the dealings between the workmen and the company were settled by orders on the furnace store so that the volume of this paper money circulated at Weymouth could not have been very large.

Many of the grave markers in the old cemetery at Weymouth were cast at the local furnace. It is peculiar that, though these castings have been exposed to the weather for a hundred years, they show little signs of rusting—confirming the claim made by these early iron founders that the iron made from bog ore was "non-rust."

WHIPPANY BLOOMERY

Morris County

PROBABLY the second oldest forge in New Jersey and certainly the first bloomery in Morris County was located on the Whippany River, about four miles northeast of Morristown.¹ In the manuscript *History of the Hanover Presbyterian Church*, written by Rev. Jacob Green in 1767, he says:

About the year 1710 a few people removed from Newark and Elizabeth, &c., and settled on the west side of the Pessaick River in that which is now Morris County. Not long after the settlers erected a house for the public worship of God on the banks of the Whippenung River (about three miles west of the Pessaick River), about one hundred rods below the Forge which is and has long been known by the name of The Old Iron Works.²

This is evidently the works which were later known as the Whippany Bloomery.

In an advertisement which appeared in 1734³ mention is made of a tract of land on Whippany River, "within half a Mile of the Iron-works," and in the *Pennsylvania Journal*, March 1, 1742/43, a tract of land on the Whippany River, "within three Miles of an Iron Works & Saw Mill" is offered for sale, and from the further description of the tract it evidently refers to the Whippany Bloomery.

Its ore was brought in leather bags from Dickerson's Mines, eight or ten miles away, and the bar iron was packed to market in the same way. The bars were cut so as to be easily carried, and a horse would make about fifteen miles a day under a load of four or five hundred pounds.

Dr. Tuttle, after examining all the authorities, says: "My conjecture is that John Ford and Judge Budd built the Forge at Whippany." It was no doubt a very small affair and used the most primitive methods of smelting the ore.

¹ J. B. Pearce, *History of Iron Manufacture*, p. 55.

² Quoted by Rev. Jos. F. Tuttle in *Proceedings New Jersey Historical Society*, Second Series, II, 15ff.

³ *New York Gazette*, August 26, 1734, in *New Jersey Archives*, First Series, XI, 353.

DAVID WRIGHT'S OR FEDERAL
FORGE AND FURNACE
OR
DOVER OR MANCHESTER FURNACE

Monmouth County

now

Ocean County

ON THE old Hurrican Brook, or Horicon branch of Toms River, David Wright and Caleb Ivins in 1789¹ erected a forge which became known as "David Wright's Forge," as Ivins soon relinquished his interest in the works.

The exact location of the site of this forge has been recently located through information furnished by Mr. John W. Wainwright, who has resided in Manchester (now Lakehurst) since 1842. On the ground south of the graveyard of the Baptist Church in Lakehurst are to be found numerous pieces of charcoal, slag, and ore, and a few hundred yards upstream may still be seen the foundations of the old dam and raceway. Around nearly all the furnace and forge sites in South Jersey are to be seen magnificent buttonwood and white pine trees. There is no exception in the case of the Federal Furnace and these aid in fixing its location.

In 1793, Wright offered the property for sale and at that time stated that the forge contained three fires and one hammer.² Besides the forge itself there was on the tract "a good SAW MILL with two saws," fourteen or fifteen log dwelling houses for the workmen, a two-story frame house for the owner or manager together with numerous other buildings suitable for storehouses, coal houses and stabling. Wright at the time owned considerable land around the forge and "a considerable share of propriety rights, or untaken up land, of which a great quantity adjoins the forge tract." The forge itself was located eight or nine miles from the "Toms River landing," whence good water transportation was to be had to Philadelphia or New York.

¹ Edwin Salter, *History of Monmouth and Ocean Counties*, pp. 279-280.

² *New Jersey Gazette*, December 18, 1793.

David Wright's Forge

It is not known when the name of the forge was changed to Federal Forge, but it is probable that it occurred shortly after the appearance of this advertisement, since about 1795 John W. Godfrey of Philadelphia built the Federal Furnace near the site of this forge on a tract of land which he took up under propriety rights purchased from David Wright and Caleb Ivins. In deeds dated in 1795, the "coaling grounds" for both David Wright's Forge and also for Federal Furnace are mentioned, but in a deed dated in 1797, the Federal Company's coaling ground on Hurrican Neck is designated,³ showing that the Federal Furnace had passed into the hands of a company which probably also took over the "David Wright's Forge." In the *Martha Furnace Diary*, we learn that in 1811 it was called Federal Furnace or Federal Works.

In the *Town Book* of old Dover township, which embraced a large part of the present county of Ocean, we find the name Dover Forge mentioned as early as 1822, and Dover Furnace under date of 1828, and in old surveys Dover Furnace is often qualified with "late Federal furnace."⁴ On Gordon's *Map of New Jersey*, published in 1828, both Dover Furnace and Dover Forge are shown, one on a branch of Toms River and the other on Cedar Creek.

Godfrey conveyed the property to John Clark, merchant of Philadelphia, who on August 24, 1815, transferred "All that certain Iron forge and furnace Called the federal forge," together with the sawmill and gristmill and several tracts of land belonging to them situated in Dover township, Monmouth County.⁵ From Clark it passed to Jones and Holmes and then to Griffith Jones alone. From now on there were frequent sheriff's levies until it came into possession of General Samuel J. Read. It was no doubt during the ownership of the latter that the name was changed from Federal to Dover Furnace. From 1829 to 1832, and probably up to the time of his death, which occurred in 1836, Read had cut many thousand cords of wood from this tract for the use of the ironworks. Title to the woodland properties connected with Dover Furnace brought one of the most interesting cases before the New Jersey Supreme Court in 1855.⁶ It involved the proper location of the dividing line between East and West Jersey and the rights of the respective Proprietors to grant lands in the angle or gore between the Lawrence Line as run in 1743, and the Division Line between East and West Jersey as established by the Royal Commission of 1767.

³ Edwin Salter, *History of Monmouth and Ocean Counties*, p. 429.

⁴ *Ibid.*, pp. 280, 364.

⁵ *Monmouth County Deeds*, Book Y, p. 608.

⁶ *Cornelius and Empson vs. Giberson*, 1 Dutcher, pp. 1-40.

New Jersey Forges and Furnaces

After the death of General Read, Benjamin B. Howell purchased the property and was soon succeeded by his sons, Henry W. and Lewis. Under the latter, extensive improvements were made, including the addition of another stack. These works were abandoned before 1855, and are not shown on Horner's revision of Gordon's *Map of New Jersey* which was made in that year.

William Torrey, Sr., in 1841 bought several tracts of woodland around the site of the Dover Furnace, containing 27,500 acres, and changed the name of the settlement to Manchester (now Lakehurst). Here he began the manufacture of charcoal on an extensive scale. He erected brick kilns to char the wood instead of using the old method of stacking the cordwood in piles and covering it with a thick layer of sand or sod. The new style of kilns were not, however, a success, since a considerable portion of the wood instead of being charred was burned up and left only an ash. To bring the finished product to tide water, Torrey had built a railroad from the westerly end of Manchester (Lakehurst) to a wharf on the south side of Toms River near the present borough of Beachwood. The rails were of wood and had strap iron fastened on the top edge, and on this the car wheels ran. An old locomotive was purchased, but operated over the road for only a short time, as it was found the wooden rails would not stand the heavy weight. On one of the trips the locomotive ran off the track near a place called Iron Bridge and, for many years, it could be seen on the side of the embankment. Mules were then used to pull the cars between the kilns and the shipping landing.⁷

Later Torrey and his sons, William Jr., and John, after several unsuccessful attempts to obtain a charter for a railroad which would have paralleled the Camden and Amboy Railroad obtained, in 1856, one for a railroad to run from Raritan Bay to Delaware Bay. This road was completed and in operation by 1860, and later became the New Jersey Southern Branch of the Central Railroad of New Jersey. The town of Manchester (renamed Lakehurst in 1897) was laid out in 1863, and the magnificent rows of elm trees which line the main street were planted about that time.

⁷ Information furnished by Mr. John W. Wainwright.

APPENDIX

IN THIS Appendix are listed some additional ironworks which were in operation in New Jersey in the early days. They are placed here rather than in the preceding text because the information relating to them is either very meager or they were so small that they made very little impress in the industry as a whole. While the author has exercised every care in the statement of the facts in each case, it is not unlikely that some errors and omissions have crept in, as it was impossible to locate original source material in many cases.

JOB ALLEN'S WORKS, Morris County. These works, which were located on the Rockaway River, are said to have been built by Job Allen about 1730. In 1748 Colonel Jacob Ford, Sr., became the owner of the land on both sides of the river at Rockaway, including the Allen Works. It was not a very large works and the product was probably all used in the neighboring communities.

AMESBURY or COKESBURY FURNACE, Hunterdon County.

The Amesbury Furnace, located on Beaver Brook in Clinton township was built, according to a letter from Mr. Percival Chrystie to Dr. B. F. Fackenthal, Jr., by Allen & Turner in 1754, which is the date shown on the old cornerstone found some years ago in the ruins. The furnace was operated only a short time as the ore which came from a nearby mine contained too much sulphur to give satisfactory results. In some of the early records it is also called Cokesbury Furnace.

BARTLEYSVILLE FORGES, Morris County. About two miles south of Flanders in the Upper German Valley were several forges along the South Branch of the Raritan River. The cluster of buildings which sprang up around these forges was in later years called Bartleyville. The forge at the latter village was erected in 1790 (*New Jersey Geological Survey*, 1910, p. 4; Munsell & Co., *History of Morris County*, p. 47) and was known as Welsh's Forge, after David Welsh, who conducted it for many years. It was in operation until about 1840, among its successive owners being Peter Kempel and Hugh Bartley. Above Bartleyville, George Salmon owned a forge which was running as late as 1862.

New Jersey Forges and Furnaces

CANISTEAR BLOOMERY, Sussex County. This bloomery was on the eastern slope of the Wawayanda Mountain in the extreme southern part of Vernon township. According to J. L. Bishop, *History of American Manufactures*, I, 546, it was erected in 1796, but it is not known by whom it was built nor much about its later history other than that it was at one time operated by Adam Smith and the Day brothers. The forge stood on the easterly bank of Pecack Creek from which it obtained the power. With the building of the Canistear Reservoir belonging to the city of Newark, in the center of which was the original forge lot, the course of the creek has been changed and every vestige of the forge removed.

GREGORY or CARTHAGE FORGE, Morris County. It is not known exactly when Samuel S. Gregory erected the forge on Pequannock River near Newfoundland which he called Carthage Forge, better known as Gregory's Forge. In the tax return for 1782, Gregory & Sheearman are assessed for a forge with two fires, but the name disappears from subsequent tax lists so that it is not known what became of it after the first levy.

HARD BARGAIN FORGE, Morris County. This forge, which was located on the westerly slope of Green Pond Mountain on a small brook running from Little Mooseback Pond and emptying into the Rockaway River a short distance below Petersburg, was built some time between 1790 and 1795. (J. L. Bishop, *History of American Manufacturers* gives the date about 1790, while Munsell & Co., *History of Morris County*, p. 44, names 1795 as the year of its erection.) Although only a one-fire plant, there were nine partners interested in it. Among the members of the company was John Dow, Christian Strait, and John Davenport, with Cornelius Davenport as the manager. After the death of the latter in 1815 it was operated by Ephraim and Samuel Adams, and in 1828 by Samuel Adams and Edward Dean.

HATHAWAY FORGE, Morris County. Captain James Keen built a forge on the Whippany River about a mile west of Morris Plains and operated it until 1780. Jonathan Hathaway then operated the plant for twenty-five years and was followed by Benjamin Holloway who continued in possession of the works until it burned down in 1806. The plant was immediately rebuilt and continued in operation until 1821, when the dam broke away and was never repaired.

HOPEWELL FORGE, Morris County. On the Rockaway River about three miles above Milton and eighteen miles north of

Appendix

Rockaway, tradition says Colonel Samuel Ogden of Boonton, about 1780, erected a works which he called Hopewell Forge. In 1812 it was rebuilt by Samuel G. I. DeCamp, who operated it only a short time when Joseph Chamberlain became the lessee or owner.

HURDS' or TWO PARTNERS FORGE, Morris County. In 1804 or 1805, Joseph and Daniel Hurd built a two-fire forge on Weldon Brook, a branch of Beaver Creek. The original name of the land on which this forge was built was called the "Two Partners Tract" and the works was sometimes designated Two Partners Forge, and the village which sprang up in the vicinity Two Partners, and later changed to Hurdtown. Daniel Hurd soon withdrew from the partnership and Joseph conducted the work alone. His name appears on the assessment lists up to 1820, after which Margaret Hurd and David B. Hurd are each assessed for one forge fire.

IMLAYSTOWN BLOOMERY, Monmouth County. According to Professor Cook (*New Jersey Geological Survey*, 1910, p. 2) a bloomery was built at Imlaystown in 1716. Nothing is known of its activities and it is supposed to have been operated for only a short time. J. B. Pearse in his *Iron Manufacture*, p. 55 says: "The owner of Imlaystown bloomery, alluding to the decline of the trade under British restrictions, used to say that at first the state of his business was 'go penny, come pound,' but he had carried it on till it became 'go pound, come penny.'"

LOWER LONGWOOD FORGE, Morris County. This forge, which stood on the Rockaway River about two miles from Hurdtown and on the northerly side of Green Pond Mountain, dates from about 1796, and was built or carried on by Ebenezer Tuttle and Grandin Morris. Ten years later it was purchased by Canfield & Losey and was part of their estate which eventually passed to Blackwell & McFarlan.

LOWER STOCKHOLM, Sussex County. Early in the nineteenth century a small forge was operated on the Pequannock River below Stockholm by John O. Ford. It was later carried on by John Lewis, who converted it into an anchor shop.

LUBBER'S RUN FORGE, Sussex County. On Lubber's Run, about one mile above Waterloo, John Smith of Schooley's Mountain built a small forge in 1800. In its operation he was assisted by his sons, Peter and Nathan. After several changes of ownership it was finally abandoned about the time the Morris Canal was built.

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MARY ANN FORGE, Burlington County. It has been stated by several writers that this was a furnace and was built in the early 1790's but there does not seem to be any foundation for either of these statements. It is not shown on any of the early maps examined nor is it mentioned in T. F. Gordon's *Gazetteer of New Jersey*. The first map on which Mary Ann Forge appears is the Finley Map of 1831. The land on which this forge stood was long known as the Mary Ann Tract, on which there were several saw-mills. On a map made in 1861, it is marked "Marian Forge."

Benjamin Jones purchased this tract from John Black in May 1827, and a few years later built the Mary Ann Forge on Mount Misery Run about three miles southeast of New Lisbon. Its two hammers were supplied with pig iron from the Hanover Furnace. When Samuel H. Jones and Richard Jones purchased the holdings of their father, Benjamin, in 1846, this tract was included in the sale. Its subsequent history is closely interwoven with the many financial difficulties of the Jones brothers. In 1851, Samuel H. Jones gave a mortgage to Anthony S. Morris, trustee, for one-half part of the Hanover Furnace Tract, Mount Misery Tract, Mary Ann Forge Tract, and several other tracts, which is the first recorded notice of the forge that has been located. The forge itself continued to be operated until late in the Civil War, and on a map made in 1877 is marked "not now in use," and today the only trace of the old plant is a pile of forge cinders, the dam and sheeting.

The principal products of the forge were first bar iron. In later years, wagon axles and wagon tires were made on an extensive scale.

MENDHAM FORGES, Morris County. There were three forges in Mendham township in the early days, namely Rushe's Forge, Liddle's Forge and Rye Forge. Rushe's Forge was located on the Indian Brook, a branch of the North Branch of the Raritan River, about one and a half miles north of the village of Mendham. It was built by Michael Rush and is named on the tax assessors' list for the years 1786 to 1790 as a one-fire forge. Later it was owned by Jacob Rush, who appears on the tax returns for 1808 and 1809. The old Washington Turnpike from Phillipsburg to Morristown passed through the forge property. Liddle's Forge was built by William Liddle and was situated on the North Branch of the Raritan River a few miles below the village of Ralston. The Rye Forge was on the Whippany River but nothing is

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known of this works. It appears on the tax duplicates as early as 1782.

MERIDEN FORGES, Morris County. On Beaver Brook at Meriden in old Pequannock township there were two forges in the early days, one on the north side of the road leading from Muir's to Split Rock and the other on the south side of the same road and on the opposite side of Beaver Brook. The northerly one, known as the Old Meriden Forge, was built about the same time as the Split Rock Forge (1790) and Professor Cook calls it Stickle's Forge. It was later owned by Peter Heyler, the tax duplicates for the years 1809, 1810, and 1811 showing him as having been assessed for one forge fire at "Meriden Forge." It is not known who built the other forge, but the records show that Colonel John Hinchman of Denville once owned it and later that it was the property of John Righter and was then called Righter's Forge.

METHODIST BLOOMERY, Bergen County, now Passaic County. This works located on the Pequannock River was, according to J. L. Bishop, in his *History of American Manufactures*, I, 543, erected about 1780. There is, however, some question as to who built the bloomery. One authority says Caleb Rude was the founder, while another writer states that John O. Ford was probably the builder. It was in later years owned by Jonathan Ford and is mentioned in connection with a road laid out in Saddle River township in 1795. The next known owners or lessees were Dunn & O'Brien, who in 1816 were running the plant which then contained two forge fires.

In after years it is known as John Lewis Forge. The succeeding owners were Daniel Hulme and Ebenezer W. Temple.

THE MONROE FORGE OR WALKER'S FORGE, Gloucester County, now Atlantic County, located on South River, about three miles southwest of Mays Landing, was erected in 1820 or 1821 by Lewis M. Walker. He was a native of Oley township, Berks County, Pennsylvania, and in 1811, at the age of twenty years, moved to New Jersey, where he was employed at Batsto and Weymouth Furnaces in a managerial capacity, leaving the latter furnace to establish his own works. Walker continued the operation of the forge until his death November 4, 1853, the property eventually passing to his grandson, John P. Walker.

Lewis M. Walker was a prominent man in the affairs of old Gloucester County, being at one time (1822) coroner, and when Atlantic County was formed, in 1837, its first representative in the State Legislative Council. As coroner he was required to be

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present at all executions of criminals, for which he was paid the munificent sum of four dollars on each occasion, notwithstanding that it required three days' absence from home for the performance of this duty. In 1841, he was commissioned a Lay Judge of Atlantic County, and in 1848-50 served as a member of the State Senate.

This place is designated on some maps as Monroe Forge, taking its name from James Monroe, President of the United States. The forge was located on the South River because of the splendid water power available, an act of the Legislature passed in 1786 having given the owners of the meadow lands on the west side of the river the privilege of erecting a dam and other works on the stream, providing they kept the water course open and free. In later days the product of this forge consisted of pipe fittings for water works.

MOUNT OLIVE BLOOMERY, Morris County. The first forge or bloomery in Mount Olive township was started by Samuel Heaton and his three brothers. How long they operated is not known, nor is much known about the extent of the works. Morgan Edwards' *History of the Baptists in New Jersey* says that the Rev. Samuel Heaton, who was born at Wrentham, Conn., came to New Jersey with three brothers about the year 1734 and settled near Black River in Morris County, where he set up an ironworks. This is the first information we have of these works, which afterwards became known as the Mount Olive Bloomery. Other authorities give the date of its establishment as 1753. As Samuel Heaton was ordained a Baptist minister in 1751 and went to live in Virginia the following year, it is likely these works antedate the generally accepted date and had probably been abandoned before 1753, as we do not find either of the brothers mentioned in connection with the works after this time.

NEW BOSTON FORGE, Morris County. The first and only mention found of the New Boston Forge is contained in the following announcement in *The New York Gazette or Weekly Post Boy*, September 5, 1768, of a sale to take place on the 15th day of September:

New Boston Forge, situated at Rockaway, in Morris County on the South Branch of Rariton, together with all the Houses, Water-works, Buildings, Improvements, and about thirty-five Acres of Land contiguous thereto.

This was no doubt one of the forges at Rockaway which was subsequently known by another name, but is unidentified.

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RUSSIA BLOOMERY, Morris County. On the west branch of the Rockaway River, two miles above Newton and seventeen miles north of Rockaway, Thomas Keeper built a bloomery sometime before 1780. [J. L. Bishop, *History of American Manufactures*, I, 542, says 1775, and Munsell & Co., *History of Morris County* gives the date of its erection as "before 1800."] It is first mentioned in the tax assessment of 1780 and is then called a one-fire forge. At one time it was known as Upper Framingham Forge, but Keeper preferred to call it Russia Bloomery because at that time Russian iron was in high favor among blacksmiths and other ironworkers. About 1806, William Flichter came into possession of the works and it was called in his deed "an old forge." Two years later the forge was operated by William Headley, who was assessed for only one forge fire, and during the eight years of his ownership it was generally known as The William Headley's Forge. It was successively conducted by John H. Stanborough (1816), Joseph Chamberlain (1822), and Jeture R. Riggs.

TROY FORGE, Morris County. The forge on Parsippany Creek (now Troy Creek) about one-half mile west of Troy Hills, called Troy Forge, was probably built by John Cobb in 1743. It was a small forge with a capacity of forty tons of bar iron yearly, and contained only one forge fire. The property remained in the Cobb family for many years.

UPPER LONGWOOD FORGE, Morris County. The builder of the original Upper Longwood Forge, below Hard Bargain Forge, and the date of its erection are unknown although it was a very old forge, possibly the oldest, except Lower Longwood, in Jefferson township, Morris County. In 1798, John DeCamp became the owner of the property, rebuilt and enlarged the works to a three-fire forge. The freshet of 1800 washed away this plant and a new site was then selected nearby on which to build another forge. DeCamp operated the rebuilt plant until 1817, after which it passed into other hands. At one time an anchor shop was attached to the works.

VALLEY FORGE, Morris County. This forge, located in Rockaway township on the Rockaway River, was built by Jared Coe and Minard Lefever about 1780. [J. L. Bishop, *History of American Manufactures*, I, 542; Munsell & Co., *History of Morris County*, p. 45.] Minard Lefever was in 1779 a joint owner with Jonathan Dickerson of the Succasunna Mine and, therefore, not unacquainted with the iron business. About 1800, Valley Forge was sold to Israel Canfield and Joseph P. Losey. When the forge

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was destroyed by fire in 1814, the property was then rented to Jeremiah Baker, son-in-law of Andrew King, who rebuilt the works and operated them for about one year. It then reverted to Canfield & Losey, and with their other properties passed to Blackwell and McFarlan in 1816. Jeremiah Baker again became the lessee, but misfortune came to him for the second time when, in 1828, it was consumed by fire. Again Baker rebuilt the forge and continued its operation for a number of years. In 1861 he devised it to his two sons, Henry and William H. Baker. During their ownership, it burned down a third time. Jeremiah Baker was also extensively interested in iron mining, owning the DeHart Baker Mine on Mine Hill and the Baker Mine in Rockaway township, besides conducting a general store at Mount Pleasant with his brother-in-law, Ziba Ludlow.

WADING RIVER FORGE, Burlington County. This is one of the "lost forges of New Jersey," and even its exact location is now unknown, except that it was about a mile below Martha Furnace [Advertisement quoted from *Trenton Federalist* (See Martha Furnace.)] and on a tract of land which John Youle purchased from George and William Ashbridge abutting on the old stage road from Tuckerton to Philadelphia. None of the county or state histories mention it, and were it not for the tax lists which were found some years ago, it would have been entirely forgotten. It is not shown in the return for 1806, but in that for 1809, "John Youle of Wading River Forge," is assessed for one sawmill, two gristmills, four forge fires and one slitting mill, the taxes for which were \$3.28½, the third largest assessment in the township. At the same time he also operated the Speedwell Furnace, from which doubtless the Wading River Works drew its pig iron. No reference is made to this forge in the *Martha Furnace Diary*, which begins in 1808, although Speedwell is frequently mentioned, and it is therefore inferred that these two plants were considered as one operation. In 1812, this forge, with its four fires, and three hundred acres of land are enumerated by the Washington township assessors. It is not known how long it was continued in operation. According to local tradition, when John Youle, Jr., began to enlarge the Westecunk or Stafford Forge, he combined the Wading River Forge with it and the property was eventually included in the "Wharton Tract."

WASHINGTON FORGE, Morris County. The original Washington Forge in Rockaway township on the west branch of the Rockaway River, consisting of two forge fires, was built in 1795

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by Charles Hoff, Jr., and his brother-in-law Joseph DeCamp. They operated it until 1808, when Hoff sold his one-half interest to Joseph Hurd. The latter continued to operate one of the forges independent of the other. The other forge fire was run by Joseph DeCamp and by his son James until about 1816, when it was sold to Israel Canfield & Co. On the financial reverses of the latter, it was part of the assets taken over by Henry McFarlan.

The ore used at this forge came from the bed along the Rockaway River which formed the northeast extension of the present Orchard Mine. The ore was found at a depth of twenty to thirty feet and required little in the way of equipment to secure a sufficient supply for this forge.

WELDON FORGE, Morris County. About 1800 Moses Hopping built a forge on Weldon Brook, a small stream which empties by way of Beaver Creek into the northerly end of Lake Hopatcong. There were two other forges on this stream, the upper one, built by Moses Hopping and named "Well Done" and the lower one erected by Joseph and Daniel Hurd and called Hurds or Two Partners. The flume of the old forge at Weldon was made of the trunk of an immense tree and was in use for many years. However, when it rotted away and fell down, the forge was stopped and was never resumed.

WINDHAM FORGE, Sussex County. When John O. Ford relinquished the Franklin Furnace in 1790, he built a forge of one fire on the Pequannock River below Snufftown and called it Windham Forge. He continued its operation for many years. In 1816, he was also operating several other forges, all of which, however, were built sometime after 1800. Windham Forge was later continued by his sons, the last of whom was Sidney Ford. The product at that time consisted of blooming iron and anchors.

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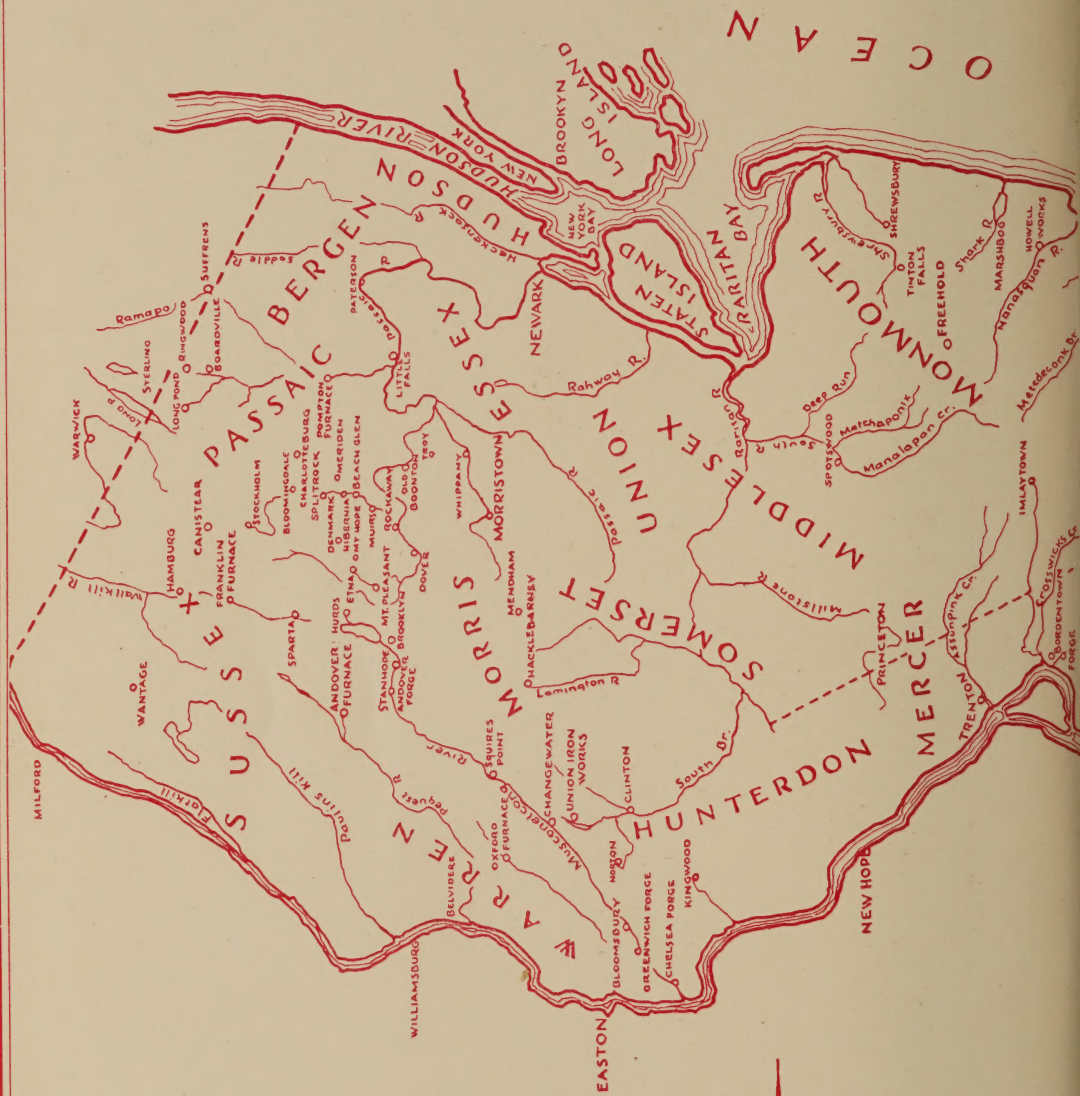
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REFERENCE



MAP OF
NEW JERSEY
SHOWING LOCATION OF
EARLY FORGES & FURNACES

